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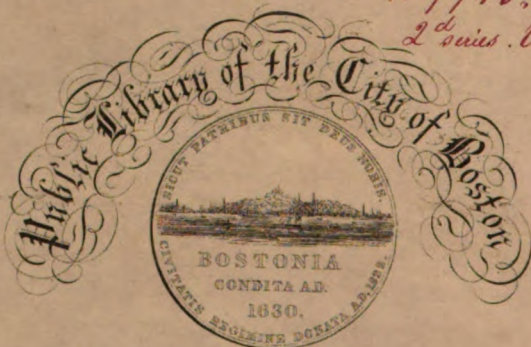


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CASES
OF
PELVIC INFLAMMATION, WITH ABSCESS,
OCCURRING AFTER DELIVERY,
WITH REMARKS,
BY JOHN C. W. LEVER, M.D.

CHRONIC inflammation of the pelvis, after delivery, is a disease sufficiently frequent to demand the attention of the obstetric practitioner; although but few writers on systematic midwifery have mentioned its occurrence. Dr. W. Hunter, in a MS. copy of his Lectures in my possession, alludes to the disease, under the name of "iliac abscess." He states his disbelief that it owes its origin to a "disposition of milk on the part," as generally described; for he has known women so affected "give suck plentifully." For its treatment, he recommends "bleeding, fomentations, and an open belly." Levret, in his "*Art des Accouchemens*," treats "*des engorgemens laiteux dans le bassin*;" and Deleurye, in his "*Traité des Accouchemens*," considers "*des dépôts laiteux dans les ligamens larges*." Dr. Kennedy has given the disease the name of "secondary inflammation;" but, by employing the term "secondary," it does not appear to have been his intention to allude to any inflammation which had previously existed, but rather to refer to the late period at which the disease becomes manifest. In the Twenty-second Volume of the Dublin Journal, Dr. Doherty has published a paper "*On Chronic Inflammation of the Uterine Appendages occurring after Parturition*;" and in the Twenty-fourth Volume of the same Journal, Dr. Churchill has written on the subject, under the title, "*On Inflammation and Abscess of the Uterine Appendages*." Perhaps one of the best menographs on the subject has been published by Professor Martin, jun., of Montpellier, entitled, "*Des dépôts des annexes de la matrice qui surviennent à la suite des couches*."

Six of the following cases were read before the Physical Society of Guy's Hospital on February 4, 1843. The remainder have fallen under my notice since that period.

CASE 1.

Puerperal Fever—Abscess opening into the Vagina.

ANN D —, the mother of six children, was attacked with puerperal fever on the third day of her seventh confinement; for which, local depletion, purgatives, diaphoretica, sedatives, fomentations to the abdomen, and hot vaginal injections, were prescribed. These sufficed to check the violence of the disorder; but there still remained some chronic inflammation about the pelvic organs, which continued for several weeks after delivery, and at length compelled her to seek my advice at the hospital, on July 28. She complained of bearing-down pains, when called to void her urine; uneasiness and weight in the pelvis, increased on pressure: her pulse was quick and feeble; her tongue furred; bowels regular; and her nights restless. A careful examination of the abdomen was made, while she was in the recumbent position; and a distinct fulness was perceptible over the region of the uterus and left ovary, causing her considerable suffering when pressed upon. A vaginal examination detected the left side of the upper part of the canal to be swollen, hot, indurated, and inelastic; and the induration extended along the roof of the vagina, as far as the meatus. Six leeches were applied above the pubes, followed by hot cataplasms; and the following medicines were prescribed,

Mist. Mag. c̄ Mag. Sulph. ʒiſs. Tinct. Hyoscyami m. xxv. ter quotidie.

Pulv. Ipecac. Comp. gr. x. ft. pulv. omni nocte horâ somni sumend.

Her symptoms continued much the same during the first week in August, when the swelling in the lower part of the abdomen became larger, attended with a continued throbbing pain: her attempts at micturition became more frequent, and accompanied with more distress: her bowels became irritable, and their action was attended with considerable tenesmus: she had nocturnal perspirations, and frequent rigors: her pulse was small, quick, and irritable: her tongue continued furred: and her

spirits were greatly depressed. On the 18th of August she was reported to have discharged, per vaginam, upwards of half a pint of pus streaked with blood: this was followed by a mitigation of all her symptoms. The purulent discharge continued to flow for several days; and vaginal examination detected the outlet to exist at the upper part of the canal on the left of the portio vaginalis of the uterus: for while the finger was retained in apposition to the opening in the vagina, firm pressure on the lower abdominal walls caused the pus freely to exude through the aperture. The vagina was frequently syringed with the tepid decoct. papav. She was ordered a more generous diet, and a pint of porter daily; and the following draught was prescribed,

Quin. Disulphatis gr. ij. Tinct. Lupuli ʒss. Infus. Rosæ
Comp. ʒiſs. m. ſt. hauſt. ter die ſum.

From this period she rapidly improved; and in about three weeks was considered well. The vaginal hardness having been removed, the canal recovered its elasticity, although the cicatrix of the artificial opening could be felt by the finger.

This woman has since been confined twice: the first labour was tedious, from the non-dilatability of the os uteri; the second was natural, and quick.

CASE 2.

Third Confinement—Abscess opening into Vagina— Phlegmasia dolens.

Mrs. J— was confined with her third child in June 1842: the labour was natural and quick, and the child large. On the third day of her delivery she had a slight rigor, attributed to her sitting too long on the bed-pan. On my paying her a morning visit, I found her with a hot skin: quick pulse (120), but small and compressible: mammæ moderately distended: lochia continuing, but in small quantities: without either abdominal tenderness or pain; although a sensation of uneasiness and weight in the pelvis, with difficulty in micturition, was complained of. Some simple febrifuge was prescribed, which alleviated the symptoms: but still the pulse ranged as high as 120; the tongue remained furred; the supply of milk became scanty; and the pelvic uneasiness gradually merged into pain.

When directed to place her hand on the most painful spot, she applied it to the left side of the uterus, in the situation of the left ovary; and upon relaxing the abdominal muscles, an indistinct sensation of fulness could be detected in that situation. Vaginal examination proved this canal to be hot and swollen; its upper part inelastic and hard; causing the patient to shrink when pressed by the examining finger. Local depletion by leeches, warm cataplasms, and tepid vaginal injections of the decoct. conii, were prescribed; and the following medicines were ordered,

Hyd. c̄ Creta gr. iij. Pulv. Ipecac. Comp. gr. vij. m. ft. pulv.
hora somni sum.
Liq. Ammon. Acet. ℥ij. Sp. Æth. Nit. ʒijss. Tinct. Hyos-
cyami, ʒiss. Mist. Camph. q. s. m. ft. mist. (℥viij.) cujus sumat
coch. duo amplā 4ta quaque hora.

Although the leeches were repeated three times, the abdominal swelling increased, and the pain assumed a pulsatory character: there were difficulty and distress in micturition; and a constant desire to evacuate the bowels, accompanied with considerable tenesmus; this sensation being much aggravated by the presence of hæmorrhoids: she had frequent attacks of rigor; and she suffered much from copious nocturnal perspirations. As her gums had become affected, the mercurial was discontinued; the warm cataplasms were repeatedly changed; the vaginal injections used more frequently and freely; and the enema amyli, with the addition of syrup papav., was occasionally thrown into the bowels, in quantities not exceeding two ounces, to allay their irritability. In three days a copious purulent discharge took place from the vagina: this lasted about ten days; and upon two occasions, its temporary stoppage caused the patient to experience considerable pain in the seat of her former uneasiness. A vaginal examination detected the opening from which the matter had issued from the pelvis, at the upper part of the canal, to the left side of the uterus in the reflexion. During the ten days the purulent discharge lasted, she took one pint and a half of porter daily; her diet was nutritious and generous; and the following draught was administered three times a day:

Tinct. Cinchonæ Comp. ʒi. Decoct. Cinchonæ ʒ xi. m. ft. haust.

At the end of the ten days the discharge ceased, having gradually declined; and its cessation was attended with considerable pain: this increased, until the symptoms and evidences of phlegmasia dolens appeared on the left side: these gradually extended from above downwards, even to the sole of the foot; they were met by leeching, and hot conium fomentations. She was ordered a sedative at night (pulv. ipecac. comp. gr. x.); and the following mixture was prescribed:

Sp. Ammon. Comp. ʒv. Tinct. Hyocyami ʒss. Tinct. Cinch. Comp. ʒiss. Infus. Serpentinae q. s. m. ft. mist. (ʒxij.) cujus sumat. coch. ij. ampla ter quotidie.

After the disease had been controlled, it again increased; but chiefly confined itself to the vessels on the nates and back part of the thigh; appearing to attack those branches of the internal iliac which enter the pelvis posteriorly, as the gluteal, obturator, ischiatic, &c. The same remedies were resorted to, and were again successful for a time; but the opposite limb now became affected, and the attendant symptoms were marked by more suffering and excitement: this probably was occasioned by the great deterioration of the patient's constitutional powers; for it was not until three weeks after the attack of the right extremity that she was enabled to leave her bed, for the sofa. It will be unnecessary to continue the history of this patient to her perfect convalescence; as the chief object I have in view is to point out the supervention of phlegmasia dolens upon pelvic abscess.

CASE 3.

Abscess opening externally on the Left Side.

Mrs. P—— was confined in Nov. 1840 with her second child. The right shoulder presented; but version was quickly and safely performed, the liquor amnii not having been evacuated. From the period of her confinement, up to the thirteenth day, her condition was not satisfactory: her pulse was never below 110; her tongue was coated; there were occasional attacks of fever; the milk was not abundant (in her previous labour it had been profuse); the lochia were scanty; and she complained of "bearing down," which she attributed to the nature of the labour. On the morning of the thirteenth day she was attacked with a rigor, followed by considerable

febrile excitement: there were pain and uneasiness in the left iliac region: the pulse 120, small: the tongue furred; and on pressing the left side of the lower abdomen firmly, she manifested great uneasiness: superficial pressure caused no pain; and it was only when the fingers were pressed into the pelvis that she complained. No unnatural condition of the vagina could be detected by a careful examination of that canal. Twelve leeches were ordered to be applied over the painful part, to be followed by a succession of hot conium cataplasms; and the following medicines were prescribed:

Hyd. Chlorid. gr. iij. statim. Ol. Ricini. ℥i. post horas tres.

Liq. Amm. Acet. ℥ij. Sp. Æth. Nit. ℥ss. Tinct. Hyoscyami ℥ij.

Aq. Menth. Virid. ℥v. m. ft. mist. cujus sumat coch. duo
ampla 4ta quaque hora.

On the following day her symptoms were ameliorated, and she expressed great relief from the application of the leeches. On the fifteenth day her symptoms were as severe as ever; and notwithstanding frequently-repeated local depletion, the exhibition of two grains of blue pill, with four of the extract of conium every night, until the gums were touched, the constant application of cataplasms &c., a considerable oblong induration was detected at the lower part of the abdomen, just above Poupart's ligament, on the left side, extending as far as the symphysis pubis. Vaginal examination was again instituted, but nothing abnormal could be detected in this canal. The constitutional symptoms, generally attending the formation of pus, now developed themselves; and in the course of a very few days decided fluctuation could be detected about the insertion of the round ligament: an incision was made, and about six ounces of most foetid pus were evacuated. The abscess continued to discharge for eleven days; and during this period she took two pints of porter and six ounces of port-wine daily, with generous diet. She was ordered,

Quin. Disulphatis, gr. ij. Acid. Sulph. Dil. m. iij. Tinct. Lupuli ℥ss. Syr. Aurant. ℥i. Infus. Rosæ Comp. ℥xss. m. ft. haust. ter quotidie sumend.

Her convalescence was protracted by two attacks of tenesmic diarrhœa; which were relieved by the exhibition of the hyd. c̄ creta and a small dose of castor-oil, followed by a simple

starch injection. After the abscess had healed, there remained a considerable induration; for which two blisters were applied, and the medicine was changed for the following:

Pot. Iodid. gr. iv. Ext. Sarzæ ʒi. Dec. Cinchonæ ʒiſs. m. ft. haust. ter die sum.

Continuing this treatment for a month or five weeks, nothing remained but the cicatrix.

I have attended this patient in a third confinement: the labour was quick, and natural; and no abnormal circumstances took place to retard her convalescence.

CASE 4.

Abscess opening externally on the Right Side.

A. M——, a strumous-looking woman, with light hair and blue eyes, and the mother of four children, states her health has been good up to the period of her last confinement, which took place ten weeks since, the labour being natural, but lingering. On the day after her delivery she suffered from shivering, followed by heat, pain, and uneasiness in the lower part of the abdomen. The latter gradually extended to the right iliac region; and for its relief, repeated fomentations and blisters had been applied. Of late this pain has been more severe, and of a pulsatory character. A hard, oblong swelling could be felt above Poupart's ligament, on the right side, giving her great pain when pressed: her tongue was white, and furred: and her pulse small, and compressible, 120. Eight leeches, followed by hot cataplasms, were applied to the painful spot; and the julep. ammon. acet., with sp. æth. nit. m xxv., were ordered to be given three times a-day. Three days after the application of the leeches the tumor was said to be less painful, and softer: the shiverings were frequent: her bowels were open: and there was less thirst. For a week her symptoms remained unchanged, with the exception of the tumor becoming larger, and its fluctuation distinct. It was proposed to open the tumor; but to this she firmly objected: and in the course of a day or two, during a sudden movement, the thin anterior wall gave way, and a considerable quantity of unhealthy fœtid pus escaped. The abscess discharged for four weeks; her constitutional powers being supported by a

generous diet, and a liberal allowance of porter. At first she took two grains of quinine, in the compound infusion of roses; but as diarrhœa supervened, it was necessary to suspend this mixture, and to check the bowel irritation by the compound chalk mixture, and the use of starch injections. The infus. cuspariæ, with sp. ammon. comp. and tinct. cinch. comp. were now ordered, and with great advantage; for she rapidly convalesced, and a slight hardness alone remained; and this even gradually disappeared.

CASE 5.

Pelvic Abscess, on both sides; the right bursting into the Vagina; the left, punctured.

MARY DONOVAN, aged 26, was admitted into Charity Ward, under the care of Mr. Morgan, who requested me to attend to her case. She stated that her general health, previously to her confinement, had been good, and that she had suffered from no disease or injury. On August 17th she was delivered, by the forceps, of a still-born male child, after a very lingering labour. On the eighth day after her confinement she left her bed. At the end of three weeks she was attacked with violent pains in her loins and lower part of abdomen, which had continued for five weeks, when she sought admission into the hospital. Upon examination, considerable pain was experienced when the inferior part of the abdomen was pressed, especially above Poupart's ligament on either side; and considerable induration could, in these situations, be detected.

Per vaginam, I found a tumor on the right side of the canal, which fluctuated; and pressing this with the finger, it burst, discharging about two ounces of foetid pus. At the end of four days a second abscess presented on the upper and left side of the vagina, which was opened by the Clinical Clerk, Mr. Miller. During the formation of the pus, the symptoms were those which usually attend this result of inflammation. After the evacuation of the second abscess her health rapidly improved; and on November 22 she left the hospital.

CASE 6.

Primipara—Abscess bursting into the Vagina, fifth week after delivery.

M—S—, aged 19, was delivered of a living child (first) four weeks since: her labour was natural, but rapid, and there was no subsequent hæmorrhage. Since her confinement she has not been free from pain, chiefly seated in the left iliac region. When visited, her countenance was pale, anxious, and dejected; her tongue furred and pointed: respiration quick, but unaccompanied by abnormal sounds; pulse rapid, small and irritable, 124; abdomen slightly tympanitic; uterus large, and easily felt above the pubes, in the left iliac region: there was a decided fulness; and the tenderness would not admit of the least pressure, without complaint: her bowels were irregular; and latterly there had been diarrhœa, accompanied with tenesmus: the urine was scanty, and high coloured.

INTERNAL EXAMINATION.—*Uterus.* The os and cervix were swollen and tender; the body enlarged; and the whole organ was heavier than natural.

Vagina. On the upper and left side of the vagina there was a dense and hard protrusion, causing great suffering when pressed by the finger; and careful examination proved this to be the same tumor which was detected externally. The left thigh, leg, and foot, were swollen, and there was considerable tenderness in the course of the vessels.

For the last four or five days she had experienced rigors, supervening about noon.

Ten leeches were ordered to be applied over the painful part, to be followed by hot linseed-meal cataplasms; and the following medicines were prescribed.

Hyd. c̄ Creta gr. v. hora somni; et Ol. Ricini 3vi. cras primo mane sumend.

Liq. Ammon. Acet. 3ifs. Infus. Cuspariæ 3xfs. m. ft. haust. 6ta hora sumend.

Fotus Papav. frequent. vaginæ tepid. injiciend.

She was advised to wean her child. (The secretion of milk had been very scanty from the first.)

The leeches drew freely; and the pain in the left iliac region, as well as in the thigh, was much relieved.

The shiverings recurred two or three times in the course of the twenty-four hours: and at the end of the fifth day from my first visit there was a copious purulent discharge, streaked with blood, from the vagina. The disulphate of quinine was substituted for the liq. ammon. acet.; a more generous diet was allowed; and she slowly convalesced

CASE 7.

Primipara—Abscess bursting into the Vagina eight weeks after delivery.

JANE R——, a strumous delicate-looking woman, had been confined upwards of six weeks, when I was requested to visit her: her labour had been natural, but protracted, from the size of the child, which was born alive. For the first eight or nine days she appeared to be progressing favourably; but on the tenth day after delivery she complained of anomalous pains, chiefly, however, referrible to the uterus and its appendages, and particularly to the left iliac region: these pains were attended with febrile excitement, remittent in their character: quick pulse, 110; foul-coated tongue; a scanty secretion of dark-coloured urine; deficient supply of milk; an irregular condition of the bowels, at one time constipated at another time relaxed. To relieve these symptoms various remedies had been administered, and with varying success. At the period of my visiting her, her countenance was pale and exsanguine: the tongue was furred; there was slight thirst; the pulse small, and irritable, 118; the abdomen rather tympanitic: the uterus was large, easily felt above the pubes; and on the left side of the uterus a distinct swelling could be felt externally, admitting of superficial pressure by the hand; but if the pressure was increased and directed towards the cavity of the pelvis, she expressed great suffering. On internal examination, the os and cervix uteri were found to be swollen, and the uterus itself enlarged; whilst on the upper and left side of the vagina a protrusion could be felt, which caused her to shriek when pressed by the finger: the whole of the canal was swollen, and the upper part felt hard and inelastic. Pain and tenderness were experienced in the course of the vessels of the left thigh, but there was no swelling or œdema of the limb. The

bowels were irritable; her nights restless; and the supply of milk was very moderate.

Eight leeches were ordered to be applied over the painful part, to be followed by a succession of hot conium poultices; the decoction of poppies to be injected (warm) into the vagina three times a-day; and the following medicines were prescribed:

Pulv. Ipecac. Comp. gr. v. omni nocte sumend.

Liq. Ammon. Acet. ʒiſs. Tinct. Hyoscyam. m. xx. Sp. Æth. Nit. m. xxv. 6tis horis ex Aqua Menth. Virid.

On the following day the pain was much relieved, but the tenderness and swelling remained the same.

She continued her medicines for three days; the pulse remained 118, small, and irritable; the bowels became more regular in their action; and the tongue clean. The character of the pain had altered; it was now throbbing: and she had experienced in the last twenty-four hours three attacks of rigor. Internal examination was again instituted, but no fluctuation could be detected at the upper part of the vagina. She was ordered to continue the Dover's powder at bed-time, and to take the following mixture:

Liq. Ammon. Acet. ʒvi. Tinct. Hyoscyami ʒjſs. Syr. Aurantii ʒiij. Infus. Cuspariæ q. s. m. ft. mist. (ʒvj.) cujus sumat tertiam part. ter quotidie.

She continued this medicine for five days; at the same time applying the conium poultices to the lower part of the abdomen, and injecting the decoction of poppies into the vagina. The rigors became more frequent, and were followed by profuse perspirations; the bowels again became irritable, and were calmed by starch and opium injections; when, whilst making a sudden effort during a fit of vomiting, a copious, foetid, purulent discharge issued from the vagina (its quantity was estimated by the attendants at a cupful). Internal examination detected the opening through which the pus had issued, capable of admitting a goose-quill, and situated at the apex of the vagina, on the left side. When the left iliac region was pressed, the matter flowed copiously through the aperture. The canal was frequently syringed; a more nutritious diet, with stout, was allowed; and the following mixture was prescribed:

Quin. Disulph. gr. vi. Acid. Sulph. Dil. m. x. Tinct. Lupuli zifs.
 Infus. Cuspariæ q. s. m. ft. mist. (3vi.) cujus sumat tertiam
 part. ter quotidie.

The discharge gradually lessened in quantity, and became thinner; and at the end of ten days from the period of bursting it had entirely ceased. The patient slowly but perfectly recovered.

CASE 8.

*Primipara—Abscess bursting into the Vagina on the Right Side
 —Death subsequently, from Phthisis.*

JANE M——, aged 19, was delivered, eleven weeks since, of a living child: the labour lasted twenty hours: the pains were regular, but of short duration: and the placenta followed the expulsion of the child, in about twenty minutes. Her mother, who brought her to my house, informed me that she had suffered from occasional pains from the period of her confinement, and that for a fortnight she had not been free from suffering. The pain was increased by her assuming the erect or sedentary posture, as well as when the fæces and urine were evacuated. Her countenance was anxious and dejected; her pulse quick and irritable; her respiration hurried: there was dullness on percussion below the right clavicle: the secretion of milk was small. The abdomen was moderately distended with flatus: the uterus could readily be felt above the pubes; and in the right iliac region a fulness was perceptible, which appeared to depend upon some swelling passing deep into the pelvis. She complained bitterly of even moderate pressure. Upon internal examination, the vagina and the uterus were hot, swollen, and tender; the upper part of the canal was hard, tense and inelastic; and, when pressed by the finger, occasioned her great agony. The finger, when withdrawn, was bedewed with a discharge of a muco-purulent character. Eight leeches were ordered to be applied over the pubes and in the right iliac region; to be followed by conium poultices, and a dose of castor-oil on the following morning.

The topical abstraction of blood was repeated three times, with great relief to the congested state of the uterus and vagina; but the pelvic swelling increased, attended with the symptoms that usually mark the formation of pus. The abscess ulti-

mately discharged itself per vaginam. Tonics, and a generous diet, maintained the patient's powers: the abscess healed; and her health seemed to be restored. In a few weeks the suspected disease of the lung manifested itself more clearly; and, after some months of great suffering, she died, with all the symptoms of phthisis.

Upon a necroscopic examination, the uterus was found to be small and atrophied (a frequent appearance in patients affected with organic lesion, in which the catamenia have been long absent): the left Fallopian tube and ovary were small, but healthy: the right Fallopian tube was small, and its fimbriae matted together: the structure of the corresponding ovary was dense and hard; in some places tubercular matter was deposited. The soft parts lining the pelvis on the right side were dense, thickened, and indurated.

CASE 9.

Primipara—Abscess bursting; first, externally; and, secondly, into the Bowel.

For the particulars of the following case I am indebted to my friend Mr. Hankins, of the Dover Road.

"MRS. B——, aged 40, was delivered of her first child on October 20, 1842: the labour was natural, and of twelve hours' duration: she had miscarried twice; the last abortion occurring two years previous to her accouchement. During the latter part of her pregnancy she suffered from frequent attacks of diarrhoea. Occasionally, considerable pain was complained of in the abdomen, more particularly referred to at the anus and course of the rectum. On the second day after her delivery the catheter was required, and its use continued for about ten days. At the expiration of a month she complained of a somewhat acute pain frequently affecting her in the left iliac fossa; and on examining the parts, I felt some degree of hardness and enlargement in that region, with tenderness on pressure. Leeches were applied, followed by cataplasms. On November 20th I requested Dr. Lever to see her: the enlargement had increased, and now occupied the space between the anterior superior spinous process and the symphysis pubis, and could also be felt per vaginam. At no period had the

constitutional symptoms been severe: slight chilliness had been experienced about ten days after the labour; the pulse were frequent, but soft; and the tongue somewhat loaded, red, but moist: the tenderness felt in the abdomen was not severe, but generally aggravated on every increase of diarrhoea, muc-enteritis being the most prominent affection: if the diarrhoea were checked for a short period, an increase of pain was felt in the iliac fossa, apparently resulting from the pressure caused by an accumulation of fæces: the bladder became irritable, and an involuntary discharge of urine frequently took place."

When I saw this patient with Mr. Hankins, I regarded her disease as "sub-acute inflammation of the ovarium and uterine appendages," and recommended that the system should be soothed and the bowels restrained: for which purpose the Dover's powder, the cretaceous mixture, with aromatic confection, and occasional light tonics, were prescribed; that leeches should from time to time be applied; and that the lower part of the abdomen should be continually covered by cataplasms.

"On Dec. 11, Mrs. B—— was seen by Dr. James Blundell: his opinion coincided with that of Dr. Lever, as to the character and nature of the disease; and he further anticipated the same result, viz. suppuration."

"Dec. 31. The swelling has increased; the most prominent part being exceedingly tender, and apparently thinning: some obscure fluctuation is to be felt: the bowels continue relaxed: there are profuse morning perspirations: the pulse small, and frequent: the tongue tolerably clean: she has but little sleep, from the acuteness of the pain: there has been no nausea or vomiting during the whole period, but her appetite is much impaired."

In a subsequent communication which I have received from Mr. Hankins, he says: "Mrs. B—— laboured under the same irritable condition of rectum, bladder, hæmorrhoids, &c. until Jan. 12, 1843; when a small opening took place, midway between the pubes and ilium, and a very large quantity of sero-purulent fluid escaped. The symptoms now began to decrease; the bowels and bladder lost their irritability; the tongue became clean; the appetite improved; and cheerful-

ness was restored to the mind. This improvement continued for two or three weeks: nutritious diet and cinchona were administered, and the bowels even required an occasional mild laxative; for if confined, increase of pain about the pubes was experienced: the discharge continued moderate in quantity, of a thin serous character, with a slight admixture of pus. There was trifling tenderness on pressure, but considerable induration around the abscess. At the end of three weeks from the opening of the abscess she ceased to improve; her appetite diminished; her bowels were more irritable; and there was evidently some fresh source of irritation. On carefully examining the right iliac region, there was tenderness, with induration; but no perceptible external enlargement. The symptoms were the same, although not so severe as those which marked the progress of the first abscess; and the same plan of treatment was resorted to, until March 12th, when, after suffering considerable pain during the night, an evacuation took place from the bowels, which was described as consisting of 'blood and matter.' (I had not an opportunity of inspecting it.) The discharge was again followed by considerable relief: the patient rallied; her appetite became good; and she gradually improved: the discharge from the parietal abscess ceased; the abdominal walls assumed their natural character, and the induration on both sides gradually diminished. Whilst perfectly quiet she continued free from pain, but experienced some weight and dragging-pain if she remained long in the erect position. About June she went into the country, and returned both strong and plump. The catamenia had re-appeared, without pain. In the autumn she suspected she was pregnant, her menses not appearing at the usual period; but in about three weeks a considerable sanguineous discharge took place, accompanied with severe pains in the back and pelvis. At the present time (Jan. 1844) she is in good health, but occasionally feels slight pains in the left groin after much exertion."

REMARKS.

1. *Seat and origin of the disease.*—It is without doubt a very difficult question to decide whether the disease in the foregoing cases commenced in the uterine appendages, strictly

so called, viz. the ovaries, Fallopian tubes, and broad ligaments, or whether the cellular tissue was the structure primarily affected. In the only case I had the opportunity of examining after death, the evidences of previous mischief were found in all these structures (see Case 8): and it is hard to conceive that one can be seriously implicated without the participation of the others. That the cellular tissue of the pelvis is involved, will, I think, be readily granted, after a careful perusal of the cases. The tumefaction felt both externally and internally; the hard, tense, inelastic condition of the vagina; and the channels by which the pus evacuates itself, its effecting its exit *without* the peritoneum; prove to my mind, very satisfactorily, that in such cases the tissue which intervenes between the pelvic fascia and serous membrane is involved.

2. *Causes.*—This disease may follow an attack of acute inflammation; or it may remain as the sequent of puerperal fever (see Case 1). In the greater number of the previous cases, anomalous symptoms displayed themselves soon after delivery. Cold, falls, blows, &c., are said to have produced the disease. In but two cases were the labours unnatural; viz. Case 3, in which the operation of version was performed; and Case 5, delivered by the forceps. In two cases the right side of the pelvis was affected; in five, the left; and in two, matter was evacuated from both sides: in one, the right preceding the left; in the other, Case 9, the pus was evacuated from the left side externally, and from the right side, through the bowel.

3. *Symptoms:—General.* The symptoms may commence a day or two after delivery, or they may supervene some days and even weeks after labour. The disease is mostly preceded by rigors, or a sensation of coldness over the surface; followed by heat of skin, quickened circulation, and pain in the region of the pelvis. The febrile paroxysms may remit, but their intervals of recurrence are at varying intervals. The uneasiness and pelvic pain continue, and, as the disease progresses, increase: usually there is some degree of stiffness in the side affected, and not unfrequently pain in the course of the vessels of the thigh and leg: this may proceed to the development of phlegmasia dolens (see Cases 2, 6, and 7). The pulse are seldom below 100—110: the tongue remains loaded:

there are frequent calls to pass the urine, which is scanty and high-coloured: at one time there is constipation of the bowels, at another, diarrhoea associated with tenesmus; and the secretion of milk is usually scant, or altogether suppressed.

These symptoms may continue for an indefinite period; when, if the disease be overlooked, or if the remedies employed do not succeed in checking its progress, they are followed by the attendant signs of suppuration, and the matter may be evacuated either by an artificial or natural opening.

Local. The patient usually directs the accoucheur to the seat of the affection: in some cases, a swelling is readily seen; in others, there is an appearance of fullness on one or both sides. This will be found very sensitive; and the patient will with difficulty be persuaded to allow a careful examination with the hand. When this is done, the whole of the iliac region, on the side affected, may be found of a "brawny hardness;" sometimes prominent, but usually very tender to the touch. This hardness has, in some cases, been found to extend as high as the umbilicus, and as forward as the linea alba. In other cases, the tumor is seated more deeply in the pelvis; and is then not so readily defined, is less moveable, and will bear superficial pressure: but if the hand be pressed deeply into the cavity of the pelvis, the patient will immediately shrink. If a vaginal examination be made, in some cases, nothing abnormal is detected; the canal may be cool; there may be no tumefaction; and the uterus may be moved without inducing great suffering: although, in by far the greater number of cases I have seen, there has been, to use Dr. Simpson's words, "a morbid permanence of the state of puerperal hypertrophy;" and, as a general rule, it will be found, that wherever pelvic inflammation occurs soon after delivery, a long period will elapse before the uterus returns to its original state. In other females, the upper part and side of the vagina will be found hard, tender, firm, and inelastic; and, by pressing upon the swelling felt through the abdominal parietes with one hand, and keeping the forefinger of the other in the canal, we are able to satisfy ourselves that the hardness and swelling felt in both situations arise from one and the same cause. Frequently, there is some lateral displacement of the uterus. On examination per rectum, the swelling is, in some instances,

found to encroach upon the bowels; and this will explain both the occurrence of tenesmus and hæmorrhoids, as well as the occasional discharge of the contents of these abscesses per anum.

4. *Diagnosis.*—(1.) *From inflammation and abscess of the abdominal walls.* I have seen three cases of inflammation followed by suppuration taking place in the parietes of the abdomen, after delivery: this has occurred from a giving way of some of the muscular fibres, or tendinous expansion, during violent efforts. The patients were sensible of the injury, and at the time of its occurrence made great complaint. On the other hand, I have seen abscess of the abdominal parietes occur without any such assignable cause; and it will be well, therefore, to mark the diagnosis between simple abscess of the abdominal walls, and those collections of matter which issue from the pelvis behind, and external to the peritoneum, presenting themselves in either iliac region. In the early stage of the latter, the skin, as well as the muscular parietes, may be readily rolled over the tumor; evidently demonstrating their non-connection: while, if the abscess be seated in the abdominal walls, by moving the one we move the other. This method of diagnosis is most satisfactorily applied when the patient is in a prone position.

(2.) *A morbid permanence of the state of puerperal hypertrophy of the uterus* may be mistaken for pelvic abscess. I have already alluded to the enlarged condition of the uterus which usually persists in women who have suffered from pelvic inflammation; and I have observed the same circumstance in females who have recovered from puerperal fever. Such swellings are not always confined to the central line, but may extend into either iliac region, and they may be associated with inflammatory effusions into the pelvis. In the diagnosis of such cases, valuable assistance will be derived from the employment of Professor Simpson's uterine bougie: by its aid the situation and size of the uterus may be determined, its mobility or fixity ascertained, and the locality of the inflammatory effusion decided*.

* Cases in confirmation are related by Professor Simpson, in the *Lond. and Edin. Monthly Journal*, No. XXXV. pp. 1010—1014.

(3.) *Fæculent Collections.*—In puerperal women we sometimes meet with tumors in either iliac fossa: on the one side arising from a collection of fæces in the cæcum; and on the other, from a similar collection in the sigmoid flexure of the colon: and such collections, by an inexperienced and careless observer, might be mistaken for inflammatory swellings. The early period at which they occur after delivery; the tympanitic condition of the abdomen; the frequent expulsions of flatus, both by mouth and anus; the frequent colicky pains; the occasional vomiting; the loaded tongue; the state of the pulse; will enable us to frame a correct diagnosis. And further, upon inquiry, we shall find that for some time the patient's bowels have been in a constipated state; while the exhibition of purgatives, and the administration of cathartic glysters, by their effects will remove all doubt from the case.

(4.) *Typhlo-enteritis.*—I need scarcely dwell upon the means of diagnosing pelvic abscess from inflammation of the cæcum, and the cellular membrane external to it. Here the symptoms of intestinal disturbance will be found at the commencement, the constitutional symptoms are more active, and soon become typhoid. The tumor itself also gives to the hand of the examiner a different sensation from that felt in pelvic inflammatory effusions; in the former, also, a "craquement" is frequently detected. Still, it must be admitted that cases are recorded in which the cæcum and its cellular bed have become secondarily affected.

(5.) *From abscess behind the flexors of the hip.*—Inflammation and suppuration are occasionally met with behind the psoas and iliacus muscles, and might, by an inattentive observer, be mistaken for the disease under consideration. In the former, however, the pain is more acute, and is increased by the slightest motion of the hip-joint: there is pain also in the knee: the patient lies with her thigh and leg flexed; she cannot allow the limb to hang down; neither can she bear the slightest weight on the foot of the side affected.

(6.) *From Sciatica.*—Dr. Churchill states he has known this affection mistaken for sciatica; but surely, if a careful internal and external examination be made, such an error cannot occur.

5. *Termination*.—The most favourable termination of pelvic inflammation is—1. By *Resolution*. This occurs when the disease is very limited, and has been early detected and controlled by the appropriate treatment: but even under these circumstances, some time may elapse before it entirely disappears. More frequently, however, from the nature of the disease having been overlooked, from its intensity, or from the state of the patient's constitution, it proceeds onwards to *Suppuration*. These abscesses evacuate themselves in various ways—1. Externally, as in Cases 3, 4, and 9. 2. Into the cavity of the peritoneum*. 3. Into the vagina, as in Cases 1, 2, 5, 6, 7, and 8. 4. Into the uterus†. 5. Into the bladder‡. 6. Into the intestinal tube, as in Case§9; and lastly, into the surrounding cellular tissue§.

6. *Sequelæ*.—1. *Immobility of the uterus*. Such a consequence of pelvic inflammatory effusion is mentioned both by Professor Simpson and Dr. Doherty. The uterus is bound down, and rendered incapable of expansion; so that if gestation occur, the ovum is prematurely cast off, and in this way may give rise to a succession of abortions. During gestation, brief though it be, the patient suffers much from pain in the region of the uterus, and the abortion is attended with an unusual degree of suffering. 2. *An impervious condition of the Fallopian tube*. This appears to have been the result in Case 8, in which, after death, the Fallopian tube on the right side was found small, and its fimbriæ matted together: or the fimbriæ may be glued to an adjacent structure. If these morbid results be confined to one side, the generative faculty will not be interfered with. 3. *Ovarian disease*. So far as my experience enables me to determine, this is a very uncommon result of the disease under consideration. The right ovary in Case 8 was found to be dense and hard; and in some spots there was deposition of tuberculous matter. Perhaps the cases that

* See Churchill's Cases, Dublin Journal, Sept. 1843; and Simpson's, Lond. and Edin. Monthly Journal, No. XXXV.

† See Huson, Dance, and Menière.

‡ See Churchill's Cases.

§ See Puzos, p. 365; and Guthrie's Case, published in Medical Gazette, Vol. XXV.

have fallen under my notice have not been watched for a sufficient length of time to enable me to say whether any structural change in the ovary is likely to take place; but at present there is no evidence in any one case of organic lesion of any of the uterine appendages.

7. *Treatment.*—In the treatment of this latent inflammation, our first object should be to procure resolution: for this purpose, heroic measures are not required, as the disease is usually found in patients whose constitutional powers are much depressed, and demand mild and cautious treatment. General blood-letting has not been required in any case that has fallen under my notice; whilst, in most, the abstraction of blood by leeches, repeated, if necessary, two or three times, has been attended with marked advantage: in my opinion, it is better to repeat the application of leeches than to apply a large number at one time. They may be applied either to the seat of pain and swelling, or to the vagina, by means of the speculum; whilst the flow of blood may be encouraged by the constant application of warm cataplasms, or the injection of the dec. conii, anthemidis, or papaveris: while blood is thus drawn from the part affected, the milder mercurial preparations should be exhibited in small but repeated doses, but just sufficient to affect the system. Two or three grains of blue pill, combined with the extract of conium, or the hyd. creta, with Dover's powder, may be given each night at bedtime, or night and morning; but the effects of this medicine must be closely watched, for its exhibition must be discontinued so soon as the red line is seen along the margin of the gums. While pursuing this plan of treatment, the secretions should be attended to; the kidneys must be kept in action; the bowels free; and at the commencement of the disease, diaphoresis may be promoted.

From the record of the cases it will be seen that the patients frequently suffer from distressing tenesmus: this may be remedied by the use of the enema amyli, to which some syrup of poppies, or tincture of opium, has been added; or by the introduction of an opiate suppository.

In some cases, notwithstanding the early employment of legitimate means to effect resolution; and in others, from the first moment of our being called in; the symptoms plainly

indicate the formation of pus. And here our object should be twofold: 1st. The promotion of suppuration and evacuation of the matter; and 2dly, The maintenance of the constitutional powers.

1. The first object will be accelerated by the continued application of medicated poultices and fomentations, which soothe the pain, and lessen the patient's sufferings. When the symptoms plainly indicate the formation of matter, and fluctuation is evident, the abscess should be opened: this may be done externally, through the abdominal parietes; internally, through the vagina, by means of the speculum and a guarded lancet; or through the rectum, by means of a trocar, as in Dr. Simpson's case.

M. Martin recommends the application of caustic potass to the abdominal parietes, for the double purpose of having an external opening and securing previous adhesion of the containing sac to the abdominal walls. This method of practice appears to have been very successful in his hands; but still there are cases to which its inapplicability must be obvious*.

In some of the cases related, the patient's sufferings would have been diminished had an earlier opening been made.

2. The constitutional powers must be maintained by a generous, nutritious diet, porter, wine, &c.; the administration of tonics, and sedatives.

Where inflammation takes place in the course of the veins and absorbents, leeching along the line of the inflamed vessels, followed by hot spirit fomentations, will be found of service; taking care, at the same time, to allay pain and irritation by sedatives, and to support the system by mild tonics.

In some cases, where the inflammation does not proceed so far as suppuration; and in others, where pus has formed and has been evacuated; there will remain considerable induration of the affected structures. Its absorption will be promoted by the exhibition of the pot. iodid. two or three times a day, in the dec. sarzæ c., or the dec. cinchonæ, and by the application of blisters.

* See Dr. Simpson's Case, *Edin. Med. and Surg. Journal*, 1843, pp. 1013—14.

The continuance of nursing is by no means an unimportant question in the treatment. In the majority of cases, the secretion of milk is scanty, and insufficient to satisfy the cravings of the child: if therefore we find the patient's strength decidedly deteriorated by nursing, we should at once forbid its continuance, and commit the infant to the care of a wet-nurse; but if, although the secretion be scanty, the patient's health does not appear to suffer, we may permit her to suckle her child.

CASES OF POISONING.

BY ALFRED S. TAYLOR.

CASE OF POISONING BY CORROSIVE SUBLIMATE.

JOHN WRIGHT, aged 38, a stout healthy-looking man, was admitted into Guy's Hospital on the 10th of February 1843. It was ascertained, that about 10 o'clock on the morning of that day he put into his mouth about two drachms of corrosive sublimate, in coarse lumps, which he masticated and swallowed: he then drank about a pint of water. A surgeon, who saw him soon afterwards, administered to him four eggs. He then vomited; and a piece of corrosive sublimate, about the size of half a nut, was found in the vessel; but this, it was supposed, had not been swallowed.

When admitted into the hospital, the following symptoms were observed:—There was great depression of the system: the extremities were quite cold: the respiration natural: the pulse scarcely perceptible: the tongue swollen, as well as the lips. The man was sensible; and complained of constriction of the œsophagus. The albumen of several eggs was immediately administered to him.

At 2 P.M. the lips were excessively swollen and tender, as well as the gums: there was incipient salivation, with pain down the œsophagus, into the stomach. The act of swallowing gave rise to much pain. The man had vomited several times, and brought up a quantity of a yellow-coloured matter, interspersed with blood: he complained of slight pain in the abdomen. There were spasms of the lower extremities: the knees were drawn up: the pulse was small, and scarcely perceptible: the tongue was white, and so much swollen, that he

could not protrude it from his mouth: the skin was rather warmer. During the day, the man swallowed about two pints of milk, and the albumen of twenty-four eggs.

Feb. 11. He had been attacked with several violent fits of hiccough during the night: there was great pain upon pressure over the region of the stomach. There was much greater difficulty of swallowing, and violent pain in the head. The lower lip had become considerably swollen, and a small blister had formed on the inside of it. The pulse was small and wiry, scarcely perceptible. He had vomited several times: the bowels were fully relieved, and the motions were of a green colour: his feet were very cold, and there was general yellowness of the skin.

12th. The skin was still very yellow: the pulse was sharp, and with difficulty felt: the swelling of the lips had subsided. The patient had vomited some green matter: his bowels were well opened, and the fæces were of a dark colour, mixed with blood. There was great pain in the region of the stomach, with difficulty of swallowing. The extremities were warm.

13th. The power of swallowing had slightly returned; but the man still complained of a burning sensation in the œsophagus: the pulse was the same as yesterday. No urine had been passed since his admission. He had had very little sleep during the night: the hiccough continued. The pupils were much contracted: the extremities cold: the bowels had been opened several times: the motions were streaked with blood, and once or twice they consisted entirely of blood, mixed with mucus. There was not much pain in the abdomen, but the sickness still continued. The lips had almost returned to their natural size: the tongue was swollen, so that it could not be protruded, and it was covered with a white fur. At 4 P.M. symptoms of delirium supervened: the pulse was small, and scarcely perceptible. The delirium increased, and he was obliged to be forcibly confined to his bed.

14th. At 6 A.M. there was stertorous breathing at intervals, and the man was evidently becoming much worse. His lower eyelid dropped, as well as his jaw; and towards noon he seemed to have great constriction of the œsophagus. Slight consciousness still remained: there was no power to

speaking; but he moved his arm about, as if aware of what was going forward. His bowels had not been relieved since six o'clock the preceding evening: no urine had been passed. The stertorous breathing continued until shortly before three o'clock P.M., when he died.

INSPECTION.—The body was examined twenty-two hours after death. There was general rigidity, but no appearance of decomposition: the atmosphere was cold, and dry. The peritoneum was healthy, and contained about one ounce of a straw-coloured liquid. At the greater curvature of the stomach, within four inches of the pylorus, there was a large patch of inflammation, about the size of the palm of the hand. The mucous membrane was highly injected with red blood, and presented marks of inflammation throughout. The slate-grey colour, which has been sometimes seen in cases of poisoning by corrosive sublimate, did not here exist. There was no appearance of corrosion or ulceration in any part. The duodenum and jejunum were healthy: there was slight inflammation of the mucous membrane about the lower two-thirds of the ileum; and this was more marked towards the termination of the intestine. Near to the cæcum there were several patches of inflammation. The whole of the large intestines were highly inflamed; and there were several small spots of ulceration, about the size of a pea. The liver was enlarged and congested: the gall-bladder contracted, and containing scarcely any trace of bile. The spleen was of its natural size, congested and firm: the peritoneal covering was thin and closely adherent to its substance. The pancreas was healthy: the kidneys of a natural size and consistence, rather florid; the cortical portion presented minute red points, more especially between the infundibula, probably the results of commencing inflammation. The right kidney had a cyst on its posterior surface, about the size of a marble, containing a clear fluid. The bladder was much contracted; the mucous membrane slightly injected: it contained about half an ounce of turbid urine.

The mucous membrane of the œsophagus was reddened from inflammation, but had no other abnormal appearance. In the chest there were found old adhesions of the pleura:

the substance of the lungs was œdematous, somewhat firm and doughy: at the base of the right lung there was inflammatory œdema. The bronchial membrane was inflamed throughout its whole extent; and within the tubes there was an abundance of frothy mucus. The bronchial glands were slightly enlarged. The pericardium contained about six drachms of a straw-coloured fluid, part of which was reserved for a chemical examination. The heart was rather smaller than natural, but the cavities and the parietes were healthy: some partially-coagulated blood was found in the organ. The head was not examined.

This Report was drawn up by Mr. J. C. Forster.

Chemical Analysis.—There was no doubt that the death of this man had been caused by corrosive sublimate: but it was considered a matter of some interest to determine—1st, Whether any of the poison remained in the stomach; and, 2dly, Whether any had become absorbed. The contents of the stomach reserved for analysis amounted to about five ounces of a highly-turbid liquid, containing loose masses of mucus, and coloured by the yellow colouring matter of the bile, as well as by blood. The first object was, to ascertain whether any of the poison existed in lumps; but none were discovered: the next point was, to determine whether any of the corrosive sublimate was held dissolved by the liquid. For this purpose, a coil of gold and zinc was suspended for some hours in the liquid, previously slightly acidulated by muriatic acid; but the gold remained untarnished. The whole of the contents were now boiled for two hours, filtered, and a fresh coil of gold and zinc introduced; but after twenty-four hours there was not the least change: thus shewing, that the mercurial poison, if any remained, did not exist in a soluble form in the contents, at least in a quantity susceptible of detection by analysis.

It may perhaps be proper to state, that, from many experiments on this subject, I have found the gold and zinc to be the best method of detecting corrosive sublimate, where the quantity of poison was small. The smallest quantity of corrosive sublimate which this test enabled me to detect, was the 144th part of a grain, dissolved in one fluid drachm, and

therefore in more than eight thousand times its weight of water. From a deposit of a thin film of mercury on the gold, a result which required a period of twenty-four hours for its accomplishment, I obtained, by heating the gold in a small reduction-tube, two well-defined globules of metallic mercury, perceptible only by the aid of a lens. This I believe to be the limit of the application of tests for this poison, when we take into consideration the absolute quantity present, and the actual quantity of liquid in which the poison is dissolved; for both of these points must be regarded, in judging of the delicacy of tests.

As, however, corrosive sublimate is liable to decomposition by the action of the mucous membrane and the albuminous liquids of the stomach, and as, in this case, a very large quantity of albumen had been administered in the antidotal treatment, it was considered probable that a portion of the poison might be locked up in the coats of the stomach, in an insoluble form. In order to determine whether this was the case or not, the stomach was cut up, and boiled for two hours, in eight ounces of water strongly acidulated with nitric acid, which has the property of dissolving, from its organic combinations, any decomposed corrosive sublimate, as well as the pure poison itself. The resulting liquid was concentrated, the surplus acid nearly neutralized, and a coil of gold and zinc introduced: but, after twenty-four hours, the gold remained untarnished; thereby proving that none of the poison had become locked up in the solid parts of the stomach. The non-detection of poison in a free state, in this instance, may have depended on the length of time to which the case was protracted (upwards of three days)—to the continuance of vomiting and purging during that time, combined with the effect of a vigorous antidotal treatment. This case illustrates the well-known and important medico-legal fact, that a mineral poison may certainly cause death, and yet no portion of it be detected in the stomach or its contents.

It may, however, be a question, whether or not the poison had been removed by absorption. I have not been able to meet with any satisfactory instance where, in a case of poisoning by corrosive sublimate, mercury has been detected in the blood, secretions, or soft organs of the body. An experi-

ment was lately performed on a dog, by Dr. Glover, in which half an ounce of corrosive sublimate was given to the animal, and its œsophagus tied. Death took place in about an hour: and the heart, and eight ounces of blood taken from the animal, were examined. Dr. Glover thought that the tests which he employed indicated the presence of mercury; but as the metal was not procured, it is left uncertain whether mercury was really present in the blood or not.—See *Ed. Med. Journal*, Oct. 1842. M. de Kramer states, that he has lately detected mercury in the blood of a person who had taken the sulphuret medicinally; but the particulars are not given.—*Ann. d'Hyg. Avril* 1843, p. 428. According to Sobernheim, where mercurial preparations have been taken a long time medicinally for producing salivation, mercury has been found in the blood, urine, and saliva; and some facts would lead to the supposition that it is eliminated in the cutaneous transpiration.—*Prakt. Toxikol.* p. 243. Such, I believe, are the principal facts connected with the alleged absorption of mercury: and with the exception of Dr. Glover's experiment, absorption, in cases of poisoning by corrosive sublimate, appears to have been rather a matter of conjecture than of proof.

In order to determine whether the poison had become absorbed in this case, the following experiments were performed. 1. Five ounces of *blood* were taken and evaporated to dryness. The dried residue was decomposed by nitromuriatic acid, which has the property, not only of dissolving corrosive sublimate, but also of transforming any organic compound of mercury into corrosive sublimate. The surplus acid was expelled by evaporation, and the residue digested in distilled water: this solution, which was nearly clear, was filtered, concentrated, and almost neutralized by potash: a coil of gold and zinc was then introduced. After twenty-four hours, the metallic coil was removed; but the gold was untarnished;—there was not the least evidence of the presence of mercury, although the greater part of the zinc was dissolved. 2. The *spleen*, which was of unusually large size, was next examined. This organ was treated in the same way as the blood, but the results were equally negative. 3. The *liquor pericardii*: The quantity of this liquid

procured for analysis amounted to two fluid drachms: it possessed a clear yellow colour, and the other usual properties of a serous secretion: it was feebly alkaline. It was treated like the blood, and submitted to the action of zinc and gold; but there was no effect after twenty-four hours.

4. Serous liquid of the *peritoneum*: About two drachms of this were examined, as in the preceding experiment; but no evidence of the presence of mercury could be obtained. In the two last cases, after the completion of the experiments, less than one-sixteenth of a grain of the poison was added; and the gold was covered with a distinct layer of metallic mercury in about five minutes. From this deposit, globules were easily obtained by heating the gold in a reduction tube. It is obvious, from what has already been said with respect to the delicate re-action of this test, that had the quantity of poison artificially added been considerably smaller, its presence would have been clearly indicated by the gold, although it might have taken many hours for this effect to follow. Thus, then, in this case—which was in every respect a fair one for testing the question of absorption—there was no evidence that this poison had really entered into the circulation, and become diffused through the body. Are we then to conclude, that, in cases of acute mercurial poisoning, mercury is not absorbed? It appears to me, that we are not justified in drawing this conclusion; because the fact may be, that the poison really exists in the blood and secretions, but our tests are not sufficiently delicate for its detection. Although the galvanic test for mercury is very conclusive, I have not found that it will readily detect less than the 144th part of a grain; and the separation of the mercury here is materially influenced by the quantity of water in which the corrosive sublimate is diffused. It is doubtful whether the test would separate any quantity less than that above mentioned: and as we are not certain of the quantity which is actually absorbed, so it is possible that the negative results may be due to the imperfection of our chemical processes. It is not here, as in the case of arsenic, that we have such delicate processes as those of Marsh, Reinsch, and Dr. Clarke to assist us.

In comparing this with other cases of acute poisoning by corrosive sublimate, it may be proper to advert to the

following points. 1st, With regard to symptoms. Some of these—as, for example, constriction of the œsophagus—were such as are commonly met with in cases of poisoning by corrosive sublimate: in others, there were some peculiarities. Thus salivation began to make its appearance in about four hours after the poison was swallowed; which, I believe, is an unusually early period for this symptom to be observed. One of the most strongly-marked symptoms was, however, the complete suppression of urine. This has been occasionally witnessed before; but here the suppression continued for upwards of three days, *i. e.* during the whole of the period that the patient survived. The effect of the poison on the nervous system was clearly indicated by the stertor and other symptoms which immediately preceded death.

With respect to post-mortem appearances, it is remarkable, that although life was so long protracted, there were no marks of corrosion, ulceration, or any tendency to perforation of the stomach. This organ was simply inflamed, and very much resembled the condition which it presents in cases of arsenical poisoning. The slate-grey colour, which the mucous membrane has been sometimes found to have on these occasions, was here entirely wanting. It is remarkable that the duodenum and jejunum should have entirely escaped the action of the poison, and that the chief effect on the small intestines was seen on the lower part of the ileum. The other appearances do not require any special notice.

The exact quantity of poison which the deceased had taken could not be correctly ascertained; there was reason to suppose, however, that he could not have swallowed less than two drachms. This quantity is fully sufficient to destroy life; although persons have been known to recover from the effects of much larger doses. It will be seen, that notwithstanding the active treatment speedily adopted, and the free exhibition of the antidote—albumen,—the fatal progress of the symptoms could not be arrested. The entire absence of the poison from the stomach shewed that the treatment had been very effectual in removing it.

The period at which death takes place in poisoning by corrosive sublimate is subject to great variation. In an

acute case, an individual commonly dies in from one to five days. Here the patient survived rather more than three days. This poison has been known to kill in three hours: and in one case, it was highly probable that the person died in two hours from its effects. One fact is certain, The time at which the poison destroys life cannot be inferred from the quantity taken. In a case related by Dr. Venables, two drachms of corrosive sublimate killed a woman in eight days;—and in another that occurred to Mr. Watson of Edinburgh, the same quantity destroyed life in six days. In a third, reported by Sobernheim, three drachms did not kill for eleven days; while in an instance recorded by Niemann (*Tasch der Gericht. Arzneyw.* p. 452.), where one ounce of the poison was swallowed, the person did not die until the sixth day.

The case here reported suggests an important subject of reflection, in relation to the evidence of poisoning, where the fact of poison having been taken requires to be established by medical evidence. Chemical evidence of the nature of the poison was here entirely wanting, so far as related to the inspection of the body: the post-mortem appearances were not very characteristic; and yet there could be no doubt that this was really a case of acute mineral poisoning. Had this been a case involving a question of murder, it would have required but a very slight exercise of ingenuity for a person to have drawn from the facts a plausible argument that it was not a case of poisoning, but one of natural disease. The actual occurrence of well-marked cases of this description should, therefore, convey a practical caution to a medical jurist, and not lead him to assume too hastily that the presence of poison in the stomach is the only *certain* evidence of death from poisoning, or to admit that, in its absence, the symptoms and post-mortem appearances might be safely referred to disease.

CASE OF POISONING BY PAREGORIC ELIXIR — COMPOUND
TINCTURE OF CAMPHOR.

IN March 1843, I was requested, by Mr. M'Cann of Parliament Street, to investigate a case of alleged poisoning by some preparation of opium. The facts, as I gathered them

from information, as well as from the depositions made at the Inquest, were as follows:—

A girl aged five-and-a-half years was labouring under slight indisposition from a cough. On the 18th of March, the mother procured a cough-mixture from a chemist's shop, of which two tea-spoonfuls were ordered to be given every four hours. At 4 P.M. the child took one tea-spoonful, the other having been probably rejected. Its cough was relieved. At about 7 o'clock the girl was observed to be drowsy; but no particular attention was then paid to the circumstance, because this was the time at which she usually went to bed. A full dose of the medicine was given to the child twice between 7 P.M. of the 18th and one o'clock of the following morning. After this, the child fell into a sound sleep, and continued in this state until 8 o'clock in the morning of the 19th, *i. e.* seven hours. She was so drowsy that she could not be easily roused. She continued to sleep more or less until 12 o'clock; and it was then found difficult to awake her. Whether the medicine was given to the child or not during this interval did not appear; although, from the quantity missing from the bottle, it was probable that a portion had been given. When she awoke, the child complained of headache, but was so far recovered as to be able to run about; and she appeared cheerful. In about two hours the child again went to bed; but she got up at 5 o'clock, and had some tea. About this time the mother gave her a dose of castor-oil; and she had another dose of the mixture with toast-and-water, but rejected part of it. The child slept until half-past 9 o'clock (about four hours). She was then roused, but again fell asleep; and about 2 o'clock on the morning of the 20th she appeared restless, and very ill. Mr. McCann was immediately sent for: he found the child insensible, with stertorous breathing; the pulse was quick; the pupils were strongly contracted; the surface of the body was cold, and the countenance pallid. From these symptoms, he inferred, as it appears to me most professional men would have done, that an over-dose of some opiate medicine had probably been given to the child. The bottle of medicine was handed to him; and from the smell and taste his suspicion was strengthened. He directed the parents to

keep the bottle in their possession until it had been properly examined.

Leeches were applied to the chest; mustard-poultices to the feet; and an attempt was made to administer some aromatic spirit of ammonia; but the jaws were firmly fixed, and there appeared to be no power of deglutition. The girl died at a quarter before six o'clock on the morning of the 20th; thus making the duration of the case about thirty-seven hours, from the time at which the medicine was first administered to her.

From inquiries made of the parents, it did not appear that the deceased had been subject to drowsiness or stupor, or manifested any particular tendency to sleep, until after the first dose of the cough-mixture had been given to her, on the afternoon of the 18th; nor was there any evidence that the deceased had laboured under disorder of the brain. These symptoms, according to the account given by the parents, appeared to come on then for the first time, and to be aggravated after the administration of each dose of the mixture. The previous illness of the child consisted in an ordinary cold, with severe cough. It was alleged, that, in addition to this, there was disease of the throat, with enlarged tonsils; but the post-mortem examination shewed that there was no disease in this, nor in any other part of the body, to account for the comatose symptoms and rapid death.

INSPECTION—The body was inspected on the fifth day after death. The brain was perfectly healthy. There was no sign of effusion, extravasation, or congestion, in any part. In the thorax there was slight emphysema of the surface of the lungs, but the organs were otherwise healthy. In the opinion of some of the examiners present, the parietes of the right ventricle of the heart were preternaturally thickened. The abdominal viscera were healthy. The stomach and intestines were reserved, and forwarded to me under seal. On opening the stomach, I found it to contain about one ounce and a half of a turbid mucous liquid, of a brown colour. The mucous membrane was pale, except in the lesser curvature, about midway between the cardia and pylorus, where there were some patches of redness. These apparently depended on post-mortem infiltration. There was no mark

of softening, ulceration, or disease of any kind, either about the stomach or intestines. The rugæ were very prominent; and the mucous glands slightly enlarged towards the pyloric end.

From this account, it will be seen that the presumption of death from narcotic poison rested, as it generally does, upon the symptoms, and upon the fact of these symptoms having speedily followed the exhibition of a medicine suspected to contain opium. The post-mortem appearances furnished no ground whatever for suspecting poison. But even when large quantities of opium are taken, the post-mortem appearances are seldom well marked; and where the dose is small, as it often is in the accidental poisoning of young children, no appearances whatever are found. Thus, then, it was necessary to look to the evidence derivable from the chemical analysis: and here, fortunately, this was not limited to the contents of the stomach, for a portion of the medicine which had been given to the child was reserved for examination.

CHEMICAL ANALYSIS.—*Contents of the Stomach.* These had a slightly acid re-action, and a faint odour; but there was no smell of opium, or of any opiate preparation. They were boiled for an hour with about two ounces of distilled water acidulated with acetic acid, and then filtered. The resulting liquid was without colour, but somewhat turbid. A small portion of it was tried for morphia, by the addition of strong nitric acid; but there was no change indicative of the presence of that alkaloïd, or any of its salts. An equal quantity was tried for meconic acid, by the addition of neutral sesquichloride of iron; but there was no reddening effect produced in the liquid. The last test is, perhaps, the most delicate, as a trial-test, for the detection of the acid always combined with morphia in opium. From these negative results, it was inferred that neither morphia nor meconic acid was present in any quantity susceptible of detection.

On adding to the filtered liquid a solution of acetate of lead, a white precipitate was thrown down, which was not meconate of lead, but a compound of the oxide of that metal with organic matter. It was perfectly re-dissolved, on the addition of acetic acid. The contents of the stomach were therefore pronounced to contain no trace of narcotic poison.

The Medicine. The bottle containing part of the cough-mixture given to the child was forwarded to me by the coroner, for examination. The bottle was found to hold, when full, eighteen fluid drachms. It contained, when I received it, six fluid drachms of a reddish-brown liquid, possessing the odour, taste, and all the other properties of paregoric elixir (compound tincture of camphor); although, on comparing it with the pharmacopœial preparation used at Guy's Hospital, it appeared to be weaker. There was no odour indicative of opium or its tincture: if any were present, it was completely concealed by the powerful odour of aniseed and camphor which is possessed by paregoric.

The contents of the bottle were distilled in a retort, at a gentle heat, until about three-fourths of the bulk of the original liquid were obtained in a receiver. This liquid was clear and colourless, but there was an opaque white sediment in it: it was perfectly neutral, smelt strongly of aniseed, and it appeared to consist of alcohol, oil of aniseed, and probably camphor. There was no trace of any other medicine or medicinal substance. On agitating the contents of the receiver, the oil of aniseed did not become perfectly dissolved by the spirit; a fact which shewed that there was some water present, and that the paregoric was probably weaker in alcohol than ordinary.

On distilling six fluid drachms of pure paregoric for the purpose of comparison, the contents of the receiver had a precisely similar odour and taste; but the oil of aniseed became immediately re-dissolved, forming a clear colourless solution on agitation. When the paregoric was diluted with an equal part of water, it became, as is well known, milky; and on distilling this, a liquid was obtained in the receiver, which did not re-dissolve the whole of the oil of aniseed on agitation. In this respect, this artificial mixture resembled the medicine submitted to analysis. It may be fairly urged, that this effect would materially depend on the relative proportions of alcohol and oil of aniseed present in the tincture; but it is not pretended that this experiment does more than enable us to distinguish a strong from a weak tincture, supposing that it has been prepared according to the formula of the London Pharmacopœia. In either case, it could throw

no light upon the relative quantity of opium present, nor on the active properties of the medicine. The inference which I drew from the result was therefore so far favourable to the party who was supposed to have improperly given the medicine, that the paregoric in the bottle had not the strength of that which is commonly sold: it was considered probable that it had been mixed with water, or some aqueous liquid. The taste was not so strong as that of the pure tincture: with regard to the odour, not much reliance can be placed upon it, because it was ascertained, by experiment, that no difference could be perceived in the odour of paregoric, whether it were in the pure state, or mixed with one, two, or even three parts of water. That the medicine had not been diluted to any great extent was, however, apparent, from the fact, that it was rendered milky by the addition of water. This result may have depended on the relative quantities of the oil of aniseed and camphor present; but, in the course of some experiments, I have found that the addition of water does not render milky a very weak tincture: so far the result appeared to shew, that while it was not so strong as the pharmacopœial tincture, it still contained a notable quantity of paregoric. But the most material point was, to determine whether the mixture really contained opium or not.

For this purpose, the residue in the retort, about one-fourth of the whole quantity, was next submitted to examination. The liquid had a brown colour, and a syrupy consistence, but no particular odour. It was diluted with water, and a few drops of acetic acid added: it was then boiled for about twenty minutes, and filtered. A portion of the filtered liquid, which was quite clear and but faintly coloured, when tested with nitric acid readily gave indications of the presence of morphia: and when to another portion the sesquichloride of iron was added, the liquid acquired the deep cherry-red colour indicative of the presence of meconic acid. This colour was not removed either by a solution of chloride of gold, of the bichloride of mercury, or by diluted sulphuric acid; results which clearly shewed that the change produced by the addition of the salt of iron was not due to the presence of a sulphocyanate, acetic acid, or an acetate.

The acidity of the filtered liquor, which was concentrated to about four drachms, was removed by the addition of ammonia, and a solution of acetate of lead added. There was only a faint turbidness produced: whether this was owing to the production of meconate of lead or not, could not be determined by direct experiment; for no perceptible quantity of precipitate was obtained on filtration. One circumstance rendered it probable that it was meconate of lead, namely, that the turbidness was not removed by acetic acid; shewing that the precipitate was insoluble in that menstruum. The slight effect produced by these tests appeared to indicate clearly that there was no sensible quantity of tincture of opium in the mixture.

As a parallel experiment, six fluid drachms of pure paregoric were distilled, and the residue in the retort treated in the same way. The effect of nitric acid and the sesquichloride of iron was more strongly marked, but the results were otherwise similar. On adding a solution of acetate of lead, there was a greater turbidness produced; but still no precipitate could be procured, sufficient to allow of the insulation of the meconic acid, and its detection by tests. Hence it was evident, that had the mixture consisted wholly of paregoric, no better evidence of the presence of opium could be procured than that which had been already obtained. It will not be difficult to account for these results, when we consider what a small quantity of meconate of morphia is contained in paregoric. Thus, supposing opium to contain, on an average, about five per cent of morphia, and one fluid ounce of paregoric,—about two grains of opium, which is a slight fraction more than the real quantity, the proportion of opium in six fluid drachms of paregoric would be only 1.25 gr., and of morphia .062 gr. With respect to the proportion of meconic acid combined with this quantity of morphia, the equivalent of the acid is represented to be about equal to two-thirds the weight of the alkaloid; and therefore the weight of meconic acid, in that quantity of paregoric, would amount to less than .041 gr. I do not know of any process whereby such minute quantities of morphia and meconic acid can be separated.

The following comparative experiments were performed:-

1. Three fluid drachms of paregoric were mixed with three fluid drachms of water, and then distilled: the residue in the retort gave clear indications of morphia and meconic acid. Acetate of lead rendered the liquid faintly turbid, like that under analysis; but the re-actions of the tests for meconic acid and morphia appeared to be somewhat stronger than those obtained from the medicine. 2. On distilling a mixture of one fluid drachm of paregoric with three of water, a liquid, much weaker than that under analysis, in colour, taste, and sensible properties, resulted. The residue gave indications of the presence of meconic acid and morphia; but these were not so apparent as in the case of the mixture submitted to examination. When pure paregoric was diluted below this point, all resemblance to the medicine, in taste and other properties, was entirely lost. One part of paregoric was mixed with nine parts of water: a pale mixture resulted, with only a faint odour and taste, and manifestly much weaker than the medicine prescribed for the deceased.

From the results of these experiments the following conclusions were drawn:—

1. That the medicine sent for analysis contained paregoric; and that its active properties were essentially due to the presence of this compound.
2. That there was no reason to believe that any other medicinal substance was present.
3. That there are no chemical means of determining the exact comparative strength of different specimens of paregoric, especially where the quantity is so small as in the present case.
4. That, to the best of my judgment and belief, the paregoric, in the mixture, had from one-fourth to one-half of the strength of that commonly used in pharmacy; certainly not less than one-fourth, and most probably was much stronger.
5. That the quantity of opium contained in six fluid drachms of paregoric is too small to allow of the separation and insulation of meconic acid and morphia by the usual processes.
6. That meconic acid and morphia were present in the contents of the bottle.

The next point consisted in determining, as nearly as possible, the quantity of opium which the child had taken. The discovery of paregoric must be considered as tantamount to the discovery of opium; not to mention, that the active principles of that drug had already been proved, by tests, to exist in the mixture.

Assuming that the whole of the contents of the bottle, eighteen fluid-drachms, had consisted of paregoric only, in a pure state; and that, as it is generally estimated in prescribing, one ounce of paregoric is equivalent to two grains of opium; there would have been contained in it four and a half grains of opium: but admitting that the liquid had only one-half of the usual strength, this would reduce the quantity to two and a quarter grains; and as there were two teaspoonfuls ordered to be given every four hours, and nine doses in the bottle, this would be equal to one-fourth of a grain for each dose, or somewhat less. Six doses were gone, there being only six fluid drachms left in the bottle; but it was said that the child had only taken five, some of the mixture having been spilled, and also lost by tasting: therefore the child, upon this assumption, would have taken about one grain and a quarter of opium, divided in five doses, over a space of about thirty hours, the doses not being given with great regularity. Had this quantity been taken in one dose, the child would probably have died in seven or eight hours, from the effects. Assuming that the bottle contained only one-fourth of paregoric, the above quantities must be reduced one-half. Each dose would, on this supposition, have contained one-eighth of a grain; and the child would have taken only five-eighths of a grain within the same period of time; a quantity which, when given in divided doses, would be scarcely likely to kill a child of this age, unless there was co-existing disease, or a very great susceptibility of the action of opium. It is highly probable, however, that the quantity of opium present was much larger than this, and therefore more nearly resembling the former proportions.

It cannot be too strongly impressed on the mind of a practitioner, that infants and young children are easily destroyed by the administration of very small doses of opium; and

questions of malapraxis have often arisen on this point. Dr. Ramisch of Prague met with an instance of a child four months old, which was nearly killed by the administration of one grain of Dover's powder, containing only the tenth part of a grain of opium: the child suffered from stupor and other alarming symptoms. Dr. Kelso met with a case where a child nine months old was killed, in nine hours, by four drops of laudanum, containing one-fifth part of a grain of opium. A case is referred to in a late number of the "Medical Gazette," in which two drops of laudanum, equal to the tenth of a grain of opium, killed an infant. Cases of a similar kind are reported by Dr. Christison; but it may be said, most of these cases were those of young infants; and therefore the inference is not so applicable to the case under investigation as that which follows. In June 1832, a child aged four and a half years was killed by a dose of four grains of Dover's powder, containing not more than two-fifths of a grain of opium: it died in seven hours. These fatal effects of opium on young children have been often referred to idiosyncrasy; but it should be remembered, that admitting the truth of this explanation, it is impossible to say, *à priori*, where idiosyncrasy exists, and where it does not. The fact is in general only fatally made known to us by the death of the child. The last case mentioned shews that a child between four and five years of age may be killed by so small a quantity as two-fifths of a grain of opium. How many out of a given number of children of the same age would thus be destroyed by a like quantity it is impossible to say; nor does it appear to me, in a practical view, to be at all material to decide this point.

In giving the full benefit to the inculpated party of the existence of the smaller quantity of opium taken by the child, it will be first necessary to inquire whether five-eighths of a grain would suffice to kill a child of the age of the deceased, when given at once. Well-ascertained facts enable us to say, whatever may be the general rule as to the operation of opium on children, that if a child of four and a half years were killed by two-fifths of a grain, it is quite possible that a child of five and a half years might be killed by taking five-eighths of a grain: and the question substantially was,

whether, in the quantity of mixture taken, there was enough opium to kill a child of that age.

But the question was not altogether so simple as this would make it appear, since the quantity of opium above mentioned was not given at once, but in five doses, over a period of thirty hours. But before considering this, which, in relation to opium, is a somewhat new question in medical jurisprudence, it will be proper to state the substance of the medical evidence, in the order in which it was given at the inquest.

Mr. McCann thought that the child had died from the effects of the opiate medicine, and that a small quantity of that drug, even when given in divided doses—as, for example, one quarter of a grain every four hours—might suffice to kill a child of the age of the deceased. I stated, that, in my opinion, the larger quantity contained in a similar mixture might certainly kill a child of about five years old; and that the smaller quantity, even when given in divided doses, might destroy life in a healthy child; that death had been caused by opium in this case; that the want of appearances in the stomach, and the non-discovery of opium in the liquid contents of that organ, were facts easily explained, from the smallness of the quantity taken, and were quite reconcilable with the supposition of death from opium; that one, or even two doses of the mixture might have been taken by the child without producing fatal effects; and lastly, that the effects of opium might be aggravated by a diseased state of the body. Dr. Babington thought that so small a quantity as three quarters of a grain, given in divided doses, would not ordinarily destroy a healthy child between five and six years of age; although, in his opinion, young children were peculiarly susceptible of the effects of opium: and that this susceptibility was occasionally seen in adults; for he had known an instance where a lady who had taken five grains of Dover's powder, *i.e.* about half a grain of opium, suffered from stupor and drowsiness for three days; that the diseased state of the heart in this child (the thickening of the parietes of the left ventricle) indicated a difficulty to the free circulation of blood through the lungs, whereby congestion and stupor might be produced; that in such a case an opiate

would act more powerfully than usual ; and lastly, that this child had certainly died from the effects of opium ; so that it would not probably have died at the same time, or under the same circumstances, had the mixture not been given to it. A physician, who appeared as a friend of the party, who had prescribed the medicine, referred death to a threefold cause: 1. disease of the heart ; 2. emphysema of the lungs ; 3. the effects of an opiate. When asked to state what was the immediate cause of death, he said that, in his opinion, these three causes operated together ; but admitted that death might have been accelerated by the administration of the opiate mixture. A question was put, Whether he thought the child would have died at the same time, and under the same circumstances, had the medicine not been administered ? but to it no direct answer was returned.

The party who prescribed the medicine alleged that the quantity of paregoric in the whole bottle of mixture could not have exceeded one to two fluid drachms, since he was never in the habit of giving larger doses than those, in similar mixtures, to children. If this statement were correct, this child, aged five years, must have died from taking a remarkably small dose of opium ; since the medical witnesses had no doubt that opium was really the immediate cause of death. Thus, upon this shewing, the quantity of opium, in each dose of the mixture, would not have been more than from one-eighteenth to one-thirty-sixth of a grain ; and the child was therefore killed by taking from one-seventh to one-third of a grain, in divided doses, over a period of thirty hours—a very improbable supposition ! It appeared, however, on examination, that the party could not exactly remember the actual quantity of paregoric which he put into the mixture in this particular case. A witness who appeared in his favour said that he was quite sure so much as one-fourth could not have been introduced ; and that if the paregoric had been mixed with one-half of its bulk of water, the mixture would have been very milky : the only legitimate inference from which was, that as there was very little milkiness in the mixture analysed, the bottle must have contained paregoric nearly in a pure state ; and therefore his evidence went to establish the very reverse of that which he wished to

prove. This witness also accounted for the loss of two teaspoonfuls from the bottle by saying that he himself consumed that quantity in tasting it.

In reference to this evidence respecting the quantity, it may be remarked, that in one of the experiments I had purposely mixed two fluid drachms of pure paregoric with sixteen fluid drachms of water; and satisfied myself, that, in colour, odour, taste, and all other properties, this artificial mixture bore no resemblance whatever to the medicine analysed. The differences were so well marked, as to leave no doubt whatever of the fact, that the mixture prescribed contained a much larger proportion of paregoric than that artificially prepared. As there was no resemblance in physical and chemical properties with a proportion of one-ninth, there could of course be nonewith a proportion of one-eighteenth: therefore I conclude it is quite certain that the mixture must have contained much more than from one to two fluid drachms of paregoric.

The verdict returned was, that the deceased had died from an over-dose of narcotic medicine; and that it was at the time labouring under slight disease of the heart.

This case suggests some important points for reflection to a medical jurist. 1. The quantity of opium required to kill a young child;—upon which some remarks have already been made. 2. Whether a quantity of opium, which would kill when given in one dose, would equally destroy life when given in divided doses, over a period of thirty hours? There are, I believe, no facts on record to enable us to return a precise answer to this question; but judging from the known operation of other poisons, it appears to me certain, when the intervals at which these divided doses are given are so short, that the patient has scarcely recovered from the effects of one before another is administered, that the poison may destroy life when the whole quantity has been taken, although each dose, individually, might be harmless. If a sufficient time has elapsed between the doses for a patient entirely to recover from the effects, there may be some doubt whether death would follow; although even here it must be borne in mind, that opium, like some other poisons, may possess an accumulative power. Thus, then, a person

might die after apparent recovery, or even when no particular effects had followed the doses previously given. The following case may serve as an illustration. A lady, aged twenty-nine, suffered from vertigo, numbness of the limbs, and other alarming symptoms of narcotic poisoning from the effects of twenty drops of tincture of opium (a quantity about equal to one grain) introduced in the form of enema. She continued in a state of delirium for twenty hours, and the numbness of the limbs only ceased after forty-eight hours. This effect could not be ascribed to idiosyncrasy, because the same dose had been administered for six nights previously, without any serious symptoms following. It appears to me impossible to ascribe it to any other than the effect of an accumulative property in the drug; and, therefore, that apparent recovery, either partial or entire, after one or more doses, does not necessarily imply that the individual has escaped the poisonous effects of the opium. In the case of the deceased, it could hardly be said that she had entirely recovered from the effects of one dose before another was administered; for the greater part of the time which she survived after beginning to take the medicine was passed in a state of stupor or drowsiness; and even admitting that she had recovered more completely than the evidence shewed, this would not preclude the fatal operation of the poison.

It may be observed of these cases, that while the whole quantity of opium taken at once might kill in a few hours, if it be taken in divided doses it may not prove fatal for two or three days: and it need hardly be observed in reference to this question, that when the quantity of opium taken at one dose is not sufficient to kill, it is of course less likely that death or any alarming symptoms would follow from the medicine being given in divided doses over a long period of time.

Some objection was made by the friends of the party who had prescribed the medicine to any inference being drawn of the strength of one specimen of paregoric compared with another; because, it was urged, the quantity of morphia contained in opium may vary, and the quantity of opium used

by one druggist in preparing the tincture might be less or more than that used by another. Then, again, it was alleged that the strength of the alcohol, and the proportions of camphor, oil of aniseed, and benzoic acid, may vary. If objections of this kind were good, poisoning by paregoric, as well as by all opiate preparations, might be carried on with perfect impunity, so far as chemical evidence, generally the most important branch of evidence on these occasions, is concerned; for the party dispensing the poisonous mixture might immediately affirm that there was no method of shewing what was really the strength of his paregoric, and that evidence of poisoning was wanting. This would be equal to calling upon those who allege poisoning from strong presumptive evidence to prove a negative from circumstances, under which such proof would be utterly impossible.

Thus, then, when children are poisoned by opiate compounds prescribed by druggists and others, a medical witness should be prepared for this specious *ex-post-facto* defence; namely, that the particular tincture or preparation was not made according to the Pharmacopœia, but according to the druggist's own formula. It is very well known that fractional parts of a grain of opium cannot be easily separated from any opiate preparation, and that by no chemical process can the exact quantity of opium in any mixture be determined: therefore, this would be a convenient way of evading all kind of responsibility for the fatal result. Thus, if by mistake or carelessness one drachm of the tincture of opium be administered to a child, and cause death with the usual symptoms of narcotism; and a medical witness proceed to infer, from the known strength of the ordinary tincture, that at least three grains of opium were present in that dose, and were sufficient to destroy life; he may be met with the answer, that the tincture in question was a private preparation, and not made according to the pharmacopœial process. If such a defence as this were admitted, no person could ever be convicted of poisoning young children under the circumstances. Perhaps the better rule would be, for a witness to say whether or not, in his judgment, there was sufficient of the particular opiate preparation present to cause death, without speculating upon the precise fractional quantities of

the drug to which this might correspond. The symptoms will indicate whether they were or were not due to the medicine; and I fully believe that no judge or coroner, when there was a strong medical opinion in favour of poisoning, would permit an accused party to shelter himself under such an evasion as this: it would be equivalent to giving him the power of escaping all responsibility for mal-practice. The preparation used would be taken to be of the proper pharmacopœial strength, unless the contrary were clearly made to appear. Indeed the common practice of making up physicians' prescriptions implies the absolute necessity for some kind of uniformity in the preparation of active medicines. When compound tincture of camphor is ordered, it is always on the presumption that half an ounce contains about one grain of opium; and what the real strength of the tincture was in this case is pretty clear from the fact, that the person who prescribed it alleged, in defence, that the quantity of paregoric in the bottle could not have exceeded two fluid-drachms, since he never gave larger doses to children! This statement implied that the paregoric employed by him was of the usual pharmacopœial strength; and furnished an answer to the injudicious efforts of his friends, who tried to make it appear that it was made from a peculiar formula of his own, and was much weaker than the pharmacopœial tincture.

On these occasions, the mode of comparing one specimen with another must depend on special facts. We may not be able to state the exact quantity of opium present, but we may be able to say whether there was much or little, and whether the proportion present was probably below a certain fixed quantity, determined by comparative experiments with the ordinary medicine.

ON
PARACENTESIS THORACIS;
 WITH CASES.

BY H. M. HUGHES, M.D.

AND
 EDWARD COCK.

GENERAL OBSERVATIONS ON THORACIC EFFUSIONS
 REQUIRING OPERATION. BY DR. HUGHES.

TO those who, from observation, are acquainted with the effects of the operation of tapping the chest, as it is now performed, or as it has been for several years performed in numerous cases in the wards of Guy's Hospital, the opinions of authors, and the representations of the surgeons of the last generation, cannot fail to excite surprise. To those, on the other hand, who have not been in the habit of seeing paracentesis thoracis, and whose chief or only acquaintance with the operation has been derived from those opinions, or such representations, and who have therefore been accustomed to regard it always as one of great importance, and not unfrequently one of considerable danger, the contents of the following paper will probably be a cause of equal surprise.

Seeing, as on many occasions I have seen, the operation performed with the utmost facility, and with less inconvenience to the patient than occurs in that of paracentesis abdominis, and followed by a very beneficial influence upon the progress of the disease for which it was adopted; I was myself much surprised by perusing, in a paper by Dr. Henry Bennet, in a recent number of a Medical Journal*, statements to the following effect:—

Boyer had performed the operation several times, but had

* See *Lancet*, Dec. 30, 1843.

never saved a single patient. Dupuytren had seen only two successful cases in fifty, in which he had either himself operated, or seen the operation performed by others. Sir Astley Cooper had seen only one successful case. Gendrin had not had one which was successful, out of twenty cases in which he had operated. The author had himself seen three unsuccessful cases; and as he mentions none upon his own authority which terminated favourably, it may be fairly presumed that he had seen none. After this long and dismal list, a few separate cases of success are referred to as rarities; and the proportion of six successful cases out of nine, by Dr. Davies, and "several" by Dr. Hamilton Rowe, are noticed as phenomena really remarkable. If the facts presented, and the information conveyed by the paper of Dr. Henry Bennet, and other recent communications to the Medical Journals, may be looked upon as a correct estimate of the amount of knowledge, or even an approach to a fair statement of the acquaintance possessed by the profession in general upon this subject, I trust that, without presumption, I may hope that some useful information may be conveyed, and some benefit conferred, by the relation of several cases in which the operation was performed, and by an explicit account of the means which have probably contributed to such results, as, according to the extracts from the paper of Dr. Bennet, must be regarded as unusually successful*.

I am unable to state on how many occasions, within the last four or five years, the operation has been practised in the wards of the hospital; but I think they must have amounted to from twenty to thirty, and believe that they have considerably exceeded the latter number. On most of these occasions I have been present: on nearly all Mr. Cock was the operator. Before that time the operation was rarely performed. This probably arose from exaggerated notions of its importance and danger. I regret that I possess notes of those cases only which have occurred under my own superintendence; and the more so, as I fear that of many no

* It must, however, be acknowledged, that Dr. H. Bennet's is certainly not a correct representation of the comparative success of the operation; as, had he consulted Dr. Townsend's valuable Essay on Empyema, in the Cyclopaedia of Medicine, he would have found several successful operations there referred to.

records have been preserved. In several of these cases fluid has been drawn off with the apparent effect of facilitating and hastening the cure. An earlier expansion of the lung, and the decrease or prevention of deformity of the chest have been the result. In other instances, death has appeared certain from other co-existing disease. The operation has been resorted to simply for the purpose of affording temporary relief; and though life has not been saved, that relief has been obtained.

It is not intended, in the following pages, to enter into the history of the operation, or to present a view of the varying, but usually very limited success which has attended it, according to the published representations of others. It is simply proposed, without minutely discussing the pathology of the diseases in which it may be practised, to consider the operation itself, including the objects proposed to be attained by, and the indications for, its employment; the importance of correct diagnosis previously to its performance; and an account of the mode in which it has been performed, often with perfect success, often with great relief to the patient, and always, as far as my knowledge extends, without injury. Some cases will then be detailed, and others briefly mentioned: after which will be inserted a table of such cases as have recently occurred, and have not been previously published, with their results, whether successful or unsuccessful; so as to present a fair view of the consequences of the operation when performed in the mode to be hereafter particularly detailed.

The diseases for which paracentesis thoracis may be employed are, hydro-pericardium; effusion of blood into the pleura; pneumothorax; hydrothorax; and empyema, or chronic pleuritic effusion. Of the operation in the two first of these complaints nothing will here be said, as we have never had an opportunity of seeing it performed. In the other three complaints, the operation may be presumed to be practised with one of three objects or ends: 1st. The direct cure of the complaint; 2dly. The relief of distressing symptoms, without any prospect of even ultimate cure; and, 3dly, Facilitating the cure principally effected by other means.

In respect to pneumothorax, I believe that we possess no

positive evidence that it ever occurs without a communication of the external air with the pleura; and that we have no direct proof that the complaint, connected as it very generally is, when arising independently of external violence, with serious disease of the lung, has ever been really cured. The opinions of almost all observers appear to be unfavourable to the operation in this complaint. In this unfavourable opinion I quite concur. I believe that the object proposed by its performance should be simply the relief of urgent and distressing dyspnoea. When gas alone is present in the pleura, and there exists a free communication between that gas and the external air through one or more bronchial tubes, or through the external parietes of the chest, the introduction of the trochar is not likely to be followed by even temporary benefit. But as I have lately stated, in an essay* upon this affection, there appear to be three states or conditions occurring in pneumothorax in which tapping may possibly be attended with advantage. The first of these may be stated to be, when, immediately after the accidental rupture of the pleura, the patient is in danger of instant suffocation from the escape of air and consequent compression or collapse of the lung. The second exists, when, after a longer or shorter duration of the complaint, and during a period of comparative quiet, dyspnoea and general distress gradually increase from the accumulation of gas in the pleura, arising from its egress being prevented or obstructed by partial or perfect occlusion in an outward direction of the aperture already existing. The third condition is, when the complaint becomes complicated with serous effusion, which renders the patient's condition more distressing by its progressive increase.

The indications for the operation in pneumothorax may therefore be stated to be the urgent dyspnoea and excessive distress of the patient, accompanied either with abnormal resonance of one side of the chest, and displacement of the mediastinum, pointing out the unnatural pressure of elastic fluid, or with dulness of side, commencing from below and gradually proceeding upwards, and varying in situation according to the position of the body of the patient.

* *Medical Gazette*, Jan. 1844.

Hydrothorax is said to be either idiopathic or symptomatic. Of the former I know nothing. There may be such a complaint, but I am not aware that I have ever met with it. I am not practically conversant with any effusion of water into the pleura arising independently either of inflammation of that membrane, or of obstruction to the circulation in the heart, lungs, or mediastinum, excepting that which, in many cases, occurs a few hours before death, or is the consequence of simple exudation after that event. The observations following must, therefore, be considered to apply only to serous effusions arising from obstructed circulation independently of inflammation. It is obvious, then, that if hydrothorax arises from an organic affection, of which, like ascites dependent on disease of the heart or liver, it is merely a symptom, it is not likely to be cured so long as that organic affection from which it proceeds remains unsubdued. The end proposed, therefore, in tapping for hydrothorax can consistently only be that of contributing to the temporary relief of the patient, and of affording a more extended period, under more favourable circumstances, of applying remedies for the removal or diminution of the original malady.

The indications for paracentesis, then, in hydrothorax may be stated to be, gradually increasing dyspnoea and orthopnoea, with a progressive dulness on percussion of one or both sides of the chest, which varies in situation according to the position of the patient, and which is found not to be under the controul of other remedies.

Chronic pleuritic effusion and empyema, the more especial subjects contemplated in this paper, may be treated of conjointly as the effects of one common cause, and usually regarded as identical. They may, nevertheless, be considered in some measure distinct; because, though empyema is almost uniformly the consequence of pleurisy, and is very commonly a chronic pleuritic effusion, it does not follow that every chronic pleuritic effusion is necessarily an empyema; and because, according to the nature and duration of the effusion, an important practical distinction may be made as to the proposed object of the operation of paracentesis.

The chief end of the operation in empyema has, I imagine,

hitherto been the direct cure of the complaint. It is to this circumstance, and the practice that has been founded upon it, that I cannot but think that the asserted want of success, which has so generally attended it, is in a great measure attributable. Such an end should not surely be contemplated by those who are practically conversant with the pathological condition of the parts principally involved in the complaint. It is in reference to the operation performed with this object, while the generally unfavourable representations of its effects were before me, that I have spoken, in some observations appended to a case of empyema in the *Medical Gazette* of June 8, 1839. Though subsequent observation has induced me to entertain a much more favourable opinion of its effects in many instances than I then expressed, yet as the intent of this paper is not so much to advocate its performance, as to present a fair statement of its results, as lately practised, the following extract from those observations may be not inappropriately here introduced:—"I have myself very rarely, if ever, seen a perfect recovery after paracentesis had been performed, or, indeed, a favourable termination to the complaint, except in those cases in which the fluid was already making its way externally. Nor, indeed, can I suppose that a perfectly favourable issue can often be reasonably expected when the condition of the parts involved in the disease is considered. In many cases there are several quarts of fluid effused; the fluid itself is of an unhealthy character—impure pus, turbid sanguinolent serum, or a combination of the two; the walls of the sac are not merely lined with false membrane, but often coated with thick layers of flocculent unorganizable lymph; the lung is compressed, bound down by adhesions, and incapable of future expansion; the ribs have in some degree lost their elasticity; and the diaphragm is in some measure paralysed. An immense unhealthy chronic abscess is, in fact, the disease to be treated; and it is, moreover, an abscess, the walls of which are incapable of collapsing, and from which, therefore, if the fluid is withdrawn, the space previously filled by it must be in some measure occupied by air. A simple case of empyema is therefore, by the operation, converted into one of pneumothorax. The presence of air alone often induces fresh

inflammatory action, the constitutional effect of which is sometimes sufficient to destroy the little remaining power of the patient." * * * * "But though the operation may be rarely advisable as a mode of cure, it may be exceedingly important as a remedy for the relief of distressing symptoms; as when a considerable accumulation of fluid, by its pressure upon the healthy side and upon the heart, causes great dyspnoea and an intolerable feeling of suffocation. In such cases it is evident that a small quantity of the fluid may be removed, not only without injury, but with very great advantage." * * * * "There are, however, some cases in which, I imagine, the operation may be advantageously performed, with the intent of more speedily curing the complaint. They are those in which fluid has been rapidly effused from severe inflammation, whether arising from common causes or from accident; in which the sufferer is young and of good constitution, and in which, both from the short duration of the complaint, and from signs afforded by auscultation and percussion, it may be fairly presumed that the lung is capable of expansion. In such cases it is possible, that, after all acute inflammation has been reduced, the trochar may be employed with benefit."—In reference especially to empyema, I am not disposed greatly to vary the tenor of the remarks contained in these extracts. The distinction there drawn between empyema, properly so called, and chronic pleuritic effusion, I still believe to be worthy of more attention than it has received. The cure in the one case, when the lung is thickly coated by albuminous matter, permanently bound down by adhesions, and consequently incapable of expansion, can be effected only by the slow process of contraction of the side and curvature of the spine, assisted by the gradual enlargement of the lung on the opposite side. It is likely, therefore, to be hastened only by the occasional withdrawal of small quantities of the fluid. When, on the contrary, as in the other case, the effusion has recently occurred, and, by the aid of the explorator, is proved not to be purulent, it appears to be a legitimate object of treatment to prevent, if possible, such continued compression, and the formation of such dense pleuritic coating of the lung as may interfere with its capability of future expansion, and to obviate the

necessity of waiting for the tardy process of absorption, contraction, and distortion. It appears also probable, that the means commonly employed for effecting this object may be materially assisted by the withdrawal of a certain portion of the fluid, and thereby affording so much space as the still expansible and expanding lung is capable of filling. Nevertheless, even in these cases, in which, if in any, it may be so considered, the operation is not to be proposed or recommended as a cure for the complaint, but simply as an important adjunct to the other means adopted for its removal.

But paracentesis may be advantageously performed in empyema, under other circumstances and for other ends. Even when the diseases, with which empyema is complicated, are considered to be necessarily fatal—even when phthisis is present, or suppuration of the lung, or mesenteric disease, is supposed to exist, when the dyspnœa and general distress of the patient are great, and are dependent upon the fluid accumulated in the pleura, immense temporary relief, though no permanent benefit, may be afforded by the operation. Neither can it be truly said, that, in such cases, the operation is unsuccessful, though the patient may ultimately, and even speedily, die. It is not adopted as a means of cure. The patient, in the case supposed, had other disease to which he would certainly, perhaps quickly, have fallen a sacrifice: his present suffering was greatly increased by a large pleuritic effusion; his chest was tapped; no bad consequences followed the operation; he was, on the contrary, greatly relieved, and passed the latter days or weeks of his life in a state of comparative ease: he died from other causes. The operation did not, indeed, save his life; it was not anticipated that it would do so; it was not performed with that intent: it effected that for which it was employed;—it afforded relief; it lightened the burden of life; it perhaps prolonged life; it was certainly advantageous; surely therefore it was *successful*.

The third object proposed to be effected by the operation of paracentesis in empyema, or chronic pleuritic effusion, is, by the occasional abstraction of a small quantity of fluid, to assist the action of other remedies, and thus to facilitate and expedite the cure. Now I am perfectly aware that Drs.

Stokes and Hope, and many others, have published, or referred to, a great number of cases in which empyema, or chronic pleuritic effusion so called, have been cured without operation. Many such cures I have myself seen: several such cures I have myself effected. But although the complaint may be, and assuredly is, in many cases, curable without paracentesis, it does not follow that this simple, and, as far as I have observed when properly performed, this harmless operation, may not be practised with advantage, for the purpose of accelerating the desired end, and thus materially contributing to a less prolonged exhibition of other undesirable remedies, to the prevention of deformity with its natural consequences, and to the saving of time. With this end in view, it appears to be especially applicable to persons of feeble power and scrofulous constitution, in whom the prolonged action of mercury or other similar remedies is likely to be followed by injurious consequences to the general health, and to those whose occupation necessarily leads to exposure to atmospheric changes, or other prolific sources of disease.

The indications, then, for paracentesis in empyema, or chronic pleuritic effusion, appear to be, in the first instance, the presence of a large quantity of fluid in the pleura rapidly effused; in the second, the distress of the patient dependent on the great accumulation of fluid; and, in the third, the existence of a considerable amount of effusion, together with such a state of constitution, or of the general health, or such other circumstances, as would render a prolonged purely medical treatment injurious or undesirable.

Upon the importance of establishing a correct diagnosis previously to the performance of paracentesis thoracis it is obviously unnecessary to insist. That the greatly-increased precision which at present exists therein is mainly attributable to the employment of auscultation and percussion must be equally obvious to all who consider the extremely unsatisfactory and indefinite character of the general symptoms of the disease under consideration, and who call to mind the numerous errors of diagnosis, and instances of unsuccessful tapping which are reported to have occurred previously to

their introduction. Patients were not very unfrequently tapped upon the wrong side, or upon both sides unsuccessfully; and an instance is recorded in which the operation was performed on the healthy side of a patient who had pneumothorax of the other side, and in which fatal consequences immediately resulted from the collapse of the healthy lung. It is not intended to be hereby intimated that mistakes may not occur, even when every possible care is used in the practice of physical diagnosis: but it may be confidently asserted, that it is the duty of every individual to employ every rational mode for the purpose of arriving at a correct discrimination of disease; and of every operator, previously to the performance of paracentesis thoracis, either himself minutely to examine the chest, if from habit he is capable of appreciating the import of the physical signs; or, if otherwise, to request the assistance of one who is therein more experienced than himself.

The diagnosis of pneumothorax is usually sufficiently easy. The severe dyspnoea, often supervening suddenly during a period of comparative ease; the tympanitic resonance on percussion which is commonly present, and the absence of respiratory murmurs; the amphoric breathing; the metallic tinkling; the metallic resonance of the voice, and cough; and, when a certain amount of fluid as well as air exists in the pleural sac, the Hippocratic succussion; suffice to distinguish it from almost every other affection of the chest. The only complaints induced with which, when proper care is employed in the examination, it is likely to be confounded, are a largely-distended flatulent stomach with a superimposed consolidated lung, and a large phthisical or other cavity in the lung itself. But in cases in which the operation of tapping is likely to be required, from the accumulation and pressure of air in the pleura, no doubt or difficulty is likely to arise from either of these causes; and in those demanding the operation from the increase of serous effusion the diagnosis merges into that of empyema, and will be considered hereafter. As to the diseases, or combination of diseases, to which reference has been made, I have, in an Essay on Pneumothorax lately published,* introduced the following remarks:—"In this combi-

* Medical Gazette, Jan. 1844.

nation (viz. a flatulent stomach overlaid by a consolidated lung) the absence of respiration, and the tympanitic resonance on percussion, are often complete; and succussion occasionally exists. The side is contracted indeed; but it is also sometimes, though rarely, so in pneumothorax. The ribs are but slightly elevated, or almost motionless; and I believe that in a few rare examples, the only circumstances upon which we can rely for the diagnosis of the two affections are, the fistulous, metallic, or amphoric breathing, and the metallic ringing of the voice, and cough, which are constantly present in the one; the want of completeness, uniformity, and consistency in the symptoms and physical signs of the other affection; and the history of the respective cases." * * * * "A phthisical cavity, indeed, may be accompanied with all the symptoms and auscultatory signs of pneumothorax; and pneumothorax by those only of a phthisical cavity. The diagnosis, in a vast majority of cases, may, notwithstanding, be effected with facility; and, in circumstances of difficulty, may be assisted by the following considerations. In simple phthisis, the typanitic resonance and the metallic tinkling (not common in any degree) are rarely so well marked as in pneumothorax; while succussion is so very unfrequent in the former, as never, with certainty, to have been heard by myself, or by any one with whom I have communicated on the subject. Laennec is reported to have heard it on one occasion. In pneumothorax the chest is *generally* enlarged: in simple phthisis it is almost always contracted. In the former affection the patient usually lies on the affected side; in the latter, upon either side, or upon the back, indifferently. In pneumothorax the cavity is commonly at the lower part of the chest: in simple phthisis the chief excavation is almost universally at the upper part."

The principal physical signs of liquid effusion are equally applicable to hydrothorax and to chronic pleurisy or empyema. It cannot always be with certainty determined whether the fluid is the consequence of inflammation or of simple obstruction. The diagnosis—which is perhaps only or mainly important as regards the ultimate prognosis to be founded upon it—must chiefly depend upon the presumptive

evidence, the previous history, and the attendant circumstances of the case. Thus, in a patient who is the subject of disease of the heart or large vessels, of the lungs, bronchial tubes, or mediastinum, and who has not suffered from the ordinary symptoms of pleurisy, it may commonly be fairly assumed that the complaint is hydrothorax. The diagnosis may, however, be often materially assisted by the reflection, that in hydrothorax, except in a few rare cases where liquid effusion is confined in detached compartments of the serous membrane, the consequence of pleuritic adhesions previously existing, the fluid much more commonly and freely than in the inflammatory effusion obeys the laws of gravity. Thus, if the patient generally lies upon the back, or, though semi-erect, without inclination to either side, liquid is frequently found upon examination in both pleuræ. If he inclines to, or lies upon, one side, it is chiefly upon that side that the dulness caused by the fluid will be most obvious. If he is able to turn upon the other side, or upon his face, for the purpose of examination, it will be found that the effusion freely follows the position of the body, and that the dulness on percussion will change its position to the most dependent part of the pleura much more remarkably than in the case of pleuritic effusion; in which I am convinced, by repeated observation, that this circumstance is not nearly so common as has been represented by some of the commentators on Laennec.

The symptoms of chronic pleuritic effusion, or rather of empyema, are said to be, laborious breathing, difficult decubitus on the sound side, enlargement, with fluctuation, of the affected side, and a dry tickling cough. What could be more indefinite than these symptoms, even if they were correctly stated? They not only possess nothing of a distinctive character, but they are not in truth collectively applicable to a great majority of cases of empyema. In the very many examples of this disease which have come under my notice, I have never, for example, observed fluctuation of the fluid, excepting in those instances in which it was obviously making its way externally. The physical signs are fortunately much more definite and characteristic. They may be generally stated to be dulness on percussion; immobility or

deficient expansion of the affected side; absence of pure respiratory murmur, distance of the respiration or tubular breathing, and ægophonic resonance of the voice if the fluid is in small quantity: absence of the respiration, of the voice, and of tactile vibration if the fluid exists in considerable amount; displacement of the heart, especially if the disease is on the left side, and depression of the diaphragm and protrusion of the liver, if it is on the right. To these may be added some which are of less frequent occurrence; viz. enlargement of the side; widening, elevation, or bulging of the intercostal spaces; an obscure sense of fluctuation; and the presence of a sulcus above the protruded liver.

Of these, dulness on percussion, immobility, or deficient expansibility of the side or part of the side affected, absence of the respiratory murmur, with or without tubular breathing, absence of the natural resonance of the voice, and of the normal vibration distinguished by the hands placed upon the chest when the patient talks or coughs, and displacement of the heart, are by far the most common, and therefore the most valuable signs. The other signs are principally dependent upon the situation and amount of the liquid effusion; and are often therefore not applicable in cases of frequent occurrence, in which the fluid is confined to particular parts of the pleura by old adhesions. It has hitherto, I think, been too much the custom of authors, when treating of empyema, to speak of it as an affection implicating the whole pleura, and to omit to mention, or to pass over too cursorily, the large proportion of cases in which the fluid is confined within comparatively narrow limits by previously existing pleuritic adhesions. There are few members of the profession for whose opinions I have a higher respect, and I may perhaps add, from whose writings I have derived more information, than those of Dr. Stokes; yet I must acknowledge, and feel bound in candour to confess, that I cannot but believe that he has exaggerated the importance of some of the signs of empyema. They are indeed highly valuable when present; but, in my experience at least, their presence is far from frequent. It is clear, according to his own shewing, that they cannot exist, except when the effused fluid is in large quantity; and it is equally clear that they must be

necessarily greatly modified by the presence of adhesions of the pulmonary and phrenic pleura: and therefore, that they are not applicable to the cases of pleuritic effusion in which, according to the doctrines advocated in this paper, paracentesis is to be practised for the purpose of facilitating or of expediting the perfect restoration of the parts concerned. I might rest herein content. But in justice to myself, and the profession to which I have the honour to belong, I feel called upon here to state, that in no case, though it has been assiduously sought for, have I ever discovered the sulcus about the depressed liver, upon the importance of which he insists; that in no case have I observed *protrusion* of the intercostal spaces; that in but few have I noticed them to be widened or elevated; that in many cases of pleuritic effusion and of empyema have I known them to be normal in extent; and that in many they have been contracted rather than enlarged.

The principal complaints with which chronic pleuritic effusion, or empyema, is liable to be confounded, are, phthisis, hepatization of the lungs, enlargement or abscess of the liver, and malignant tumor of the lung or pleura.

I have known many cases—very many cases—in which empyema has been mistaken for phthisis. But as this has arisen, not from any real difficulty in the diagnosis of the two complaints, when the physical signs have been consulted, but simply from their not having been efficiently employed; and as the distinctions between the two, when one or the other exists alone, are remarkably salient and well defined, I cannot think it necessary to dwell upon the obvious differences afforded by the physical indications of the two diseases. This may be, perhaps, best illustrated by an example. An intelligent practitioner, and a very fair auscultator, formerly a pupil of Guy's Hospital, sent a patient from the country town, in which he resided, for my opinion as to the condition of the chest, as the individual had many or most of the general symptoms of phthisis, though he was unable to detect any physical indication of the existence of that disease in the apex of either lung. I stripped the patient: the complaint appeared evident at a glance. Auscultation and percussion completely

confirmed the hasty conclusions derived from simple inspection. I sent him back to his medical attendant, with a note requesting him to inspect and examine the whole chest, but without stating my own opinion. He immediately wrote, in reply, that there could be no doubt of the presence of empyema, which would consistently explain the whole course of symptoms; and that the clear indications of that disease had not been previously discovered, simply because the probability of their existence had not been contemplated, and therefore had not been investigated.

Such cases are of frequent occurrence. Numerous errors of diagnosis arise from false delicacy. Those dependent on imperfect investigation are perhaps even more numerous. I must acknowledge indeed that I have myself more than once passed over an obvious pleuritic effusion in consequence of my attention having been too exclusively directed to the upper part of the chest, from my opinion having been especially requested as to the presence or absence of tubercular disease.

Considerable caution is sometimes necessary in deciding whether dulness of the side or back arises from pleuritic effusion or from a consolidated lung. In a case, the progress of which has not been watched, and the preceding history of which is not known, which is seen for the first time, and in which the fluid exists in quantity sufficient to displace the lung, without interfering with the position or action of the surrounding parts, the diagnosis may indeed be an affair of great nicety and extreme difficulty. The examiner may be however, assisted by the following consideration. In pneumonic consolidation there is never such modification of the dulness produced by the position of the patient as sometimes exists in pleuritic effusion: in the consolidated lung some liquid sounds, either mucous or muco-crepitating, are usually present during respiration: in pure pleuritic effusion these are altogether absent: the deficient expansibility of the side is rarely so decided in the former as in the latter: the voice in the one case is almost always increased in shrillness and power; in the other, except where the fluid exists in a thin layer, it is generally decreased in its intensity, or is absent. Pure ægophony is very rarely heard: ægophony in

any form is, in my opinion, not to be trusted as an indication of effusion. In the consolidated lung the vibration communicated to the hand may be modified; it may be diminished; but in the fluid effusion it is generally absent. No marked effect is produced by the act of coughing when fluid alone is present; whereas in the hepatized lung it is commonly accompanied or followed by some mucous or sonorous rattle, which may proceed from the part immediately beneath the ear or stethoscope, or from the very bottom of the chest, and thus, at least, indicate that the lung is there. Still it must be acknowledged, that in some cases, even after the most minute and patient consideration of the whole of the circumstances, the diagnosis may be so indeterminate as to leave considerable doubt on the mind of the examiner. In such cases, it is true, the operation of paracentesis is not likely to be called for, or to be thought desirable; but when it is required, it is in such cases especially that the use of the explorator is of the utmost importance in deciding the diagnosis.

When the fluid exists in considerable quantity, but is confined by the pleuritic adhesions, a correct diagnosis may also be a matter of considerable difficulty. The circumstances previously mentioned, with the exception of the gravitation of the fluid, will, I believe, generally lead to a just conclusion; and the defined line of the dullness and of the part in which the respiration and the voice are absent, and the indications of a merely compressed lung in the immediate vicinity, will assist in dispelling the difficulty, should any remain. When the fluid of an empyema is in large quantity, and at the same time occupies the general cavity of the pleura, the diagnosis between it and consolidated lung may usually be easily effected. The *almost* uniform inability, under such circumstances, of lying upon the sound side; the entire, or almost entire immobility, and the altered configuration, rather than the necessary enlargement of the diseased side; and particularly the lateral displacement of the heart and mediastinum, or the depression of the liver; and, according to Dr. Stokes, the disappearance of the intercostal spaces, with the presence of a sulcus above the protruded liver when the disease is on the right side; are generally amply

sufficient to distinguish it from mere consolidation of the lung.

The diagnosis between the empyema of the right pleura and enlargement or abscess of the liver may also become a source of difficulty, particularly in reference to the operation of paracentesis thoracis. Dr. Townsend, in his very valuable essay upon empyema in the *Cyclopædia of Medicine*, states the points of similitude between the two diseases, but makes no mention of the features by which they are to be distinguished. Dr. Stokes, on the other hand, in his highly estimated work on diseases of the chest, and in the *Dublin Journal*, gives in detail several circumstances by which he supposes they may usually be known from each other. I may be, perhaps, excused for quoting the following sentences from the former work.

“ The following circumstances will assist in the diagnosis (of enlarged liver) :

- “ 1. The absence of intercostal paralysis, or protrusion.
- “ 2. The clearness, on percussion, of the upper and middle portions of the chest.
- “ 3. The loudness of respiration in the postero-inferior portion of the chest, which is much greater than could be anticipated from the amount of dulness.
- “ 4. The absence of lateral displacement of the heart, and the existence, in many cases at least, of the vertical displacement upwards. This is principally seen when the left lobe of the liver is engaged.
- “ 5. The fact of the interlobular fissure being parallel with the mesian line; for, in displacement of the liver, the pressure being exercised on the right lobe, the interlobular fissure is directed towards the left side, and forms a considerable angle with the mesian line.
- “ 6. We find in cases of hepatic tumor without pleuritis that the dulness of the postero-inferior of the side disappears on the patient taking a deep inspiration; returns upon expiration; and remains fixed during ordinary breathing. I have never witnessed this phenomenon in any case of empyema. I believe, however, that the test is not applicable when the lower portion of the pleura has been obliterated by adhesions.”

Of these circumstances I conceive those marked 2, 3, 4, and 6, are by far the most valuable. My own experience leads me to place very little confidence indeed in the 1st and 5th, in consequence of the very frequent absence of intercostal paralysis, or protrusion, in empyema itself; and from the fact, that in the cases in which real difficulty occurs, the liver projects high up into the chest, and protrudes comparatively little, or perhaps not at all, into the abdomen.

The most important of all the diagnostic signs are, the presence of respiration, anteriorly and posteriorly, considerably below the line of dulness, arising from the edge of the lung passing into the angle formed between the diaphragm and the ribs, in consequence of the convexity of the liver; the absence of lateral displacement of the heart and mediastinum; the existence of the ordinary consequences of enlarged liver; and the history of the respective cases.

But of all the affections with which empyema is liable to be confounded, malignant disease of the lung, or pleura, is assuredly that from which, according to my observation, it is distinguished with the greatest difficulty. In both, there generally has existed some pleuritis; in both, there may be lateral displacement of the heart; in both, dulness on pressure, absence of respiration, of the voice, and of tactile vibration; in both, incapability of lying on the sound side; in both, frequently, œdematous enlargement of the affected side, so as to obscure the intercostal spaces. Neither Dr. Townsend nor Dr. Stokes enter upon the diagnosis between these two complaints: and though I have recently perused, for the third time, the valuable essay of the latter gentleman on malignant disease of the lung, in the 21st Volume of the Dublin Journal, I am unable to collect therefrom any thing which induces me to alter the tenor of the following observations in the Sixth Volume of Guy's Hospital Reports.

"It must, however, be added, that the disease sometimes, as in the second case herein related, very accurately resembles empyema; that the history of the case, and the physical signs, are on such occasions insufficient for the purpose of distinguishing the two complaints: and that the diagnosis, if at all practicable, must then be deduced from the general symptoms, the peculiar character of the expectoration, the

obstruction to the flow of blood through the superficial veins of the affected side, and the appearance of malignant tumors in other parts of the body."

In some of these cases, the only certain mode of diagnosis with which I am acquainted, and which is generally applicable, is the introduction of the explorator, as practised in a case which will be subsequently referred to by Mr. Cock.

Much has been written as to the point to be selected for the introduction of the trochar in paracentesis thoracis. This is a question which will be more especially considered hereafter by my surgical colleague. But I may remark generally, that when the trochar has failed to evacuate fluid which was really present in the pleura, the failure has usually arisen, as far as I have observed, from the instrument being introduced too low down. The chief, or only important point for consideration in the selection is, the exact situation in which the fluid *is*, and the lung or diaphragm *is not*. This can be determined only by minute and careful examination by percussion and auscultation.

OBSERVATIONS ON THE OPERATION OF PARACENTESIS
THORACIS, BY EDWARD COCK.

The operation of puncturing the chest, and withdrawing the fluid from the cavity of the pleura, is so simple, that a very few observations will be required to illustrate the manner in which I have been in the habit of performing it. The certainty of diagnosis which auscultation affords has reduced the operation from a hazardous and uncertain undertaking to one which is practicable by any surgeon of ordinary manual dexterity, and has rendered it available as an early remedial measure, instead of, as formerly, a desperate remedy, or a last resource. It is from an early application of the trochar that a successful result must be anticipated; and it is the delay, until the presence of the fluid becomes indicated by external physical signs, which has so often led to disappointment in the issue of the case. The fluid, whether the disease be empyema or simple hydrothorax, is situated between the lungs and the walls of the chest; between two structures therefore, the one firm and comparatively unyield-

ing and incapable of delatation, the other easily compressible. The weakest structure, consequently, naturally goes to the wall; and I believe that in every instance, external signs, as indicated by separation of the ribs, the bulging of the intercostal muscles, and the depression of the diaphragm, will not be made manifest until the lungs have been compressed into the smallest space, and probably rendered for ever impermeable to the ingress of air. This view of the subject, with certain modifications, obtains whether the whole pleural cavity be the seat of effusion, or whether its locality be circumscribed and bounded by adhesions.

The entire subject has already been considered by Dr. Hughes in the preceding pages; and I have merely again adverted to the general character of the disease and the conditions which render paracentesis adviseable, because I have been chiefly guided by these considerations as to the mode which I have adopted of performing the operation. In the following pages it is my intention to offer a few practical observations on the best spot for making the puncture, on the instrument to be used, together with the method of previous exploration, and on the most efficient mode of withdrawing the fluid.

As regards the spot where paracentesis should be performed, a very few words will suffice. Much has been said of external signs, such as the separation of the ribs, the bulging of the intercostal muscles, &c. In no case where I have been called upon to tap the chest have these signs existed; and in fact they can only occur where an abscess, well walled in by successive layers of fibrin, is seeking to find an outlet on the surface of the body. Auscultation and percussion are the best and surest means to detect the presence and the situation of the fluid; and on this and this alone we must place dependence. In the great majority of instances, the existence of the fluid will be most clearly indicated at the lateral and posterior part of the chest, in a position somewhat central between the upper and lower boundaries; and in every case which has come under my own hands, I have had occasion to tap below the angle of the scapula, between either the seventh and eight or the eight and ninth ribs, and at a point distant from one to three inches from the angles of

the bones. Two cases have come under my knowledge, in which, from want of proper caution in introducing the trochar, no fluid could be obtained. In one of these, which I *witnessed*, the instrument after entering the chest was carried into the diaphragm, but without passing through the muscle: in another, the operator pierced the diaphragm from above and re-entered it from below; thus, as it were, darning the muscle by transfixing it in two places. The track of the trochar, as well as the presence of abundance of fluid, were amply verified by the post-mortem examination. In both these instances a fault was committed: the puncture was made too low down, between the ninth and tenth ribs, too far forwards, and indeed at hap-hazard without attention to the auscultatory diagnosis. In a third case, in which I myself was the operator, I had every reason to believe that the escape of the diaphragm was more owing to good luck than to forethought and dexterity; for, although the fluid flowed freely, the end of the canula was clearly in contact with the floor of the chest, to which perhaps a portion of the lung had contracted adhesions. An attempt to depress the end of the tube was opposed by a solid structure and arrested the flow of water; while, as the cavity became emptied and the floor of the chest rose, the instrument gradually deviated from its horizontal position until it became nearly perpendicular. Our incapability of judging of the exact positions of the diaphragm, and the alterations which are liable to occur about the floor of the chest from recent or old adhesions between the muscle and the base of the lungs, would lead me to deprecate the practice of making a low puncture. When we have the choice of two or three intercostal spaces, I would select the upper or at any rate the middle one, as the safest and least obnoxious to those casualties which may induce a failure in our object: any advantage supposed to result from a depending opening can readily be obtained, as I shall presently shew, by adapting the position of the patient to our purpose.

Notwithstanding the perfection to which auscultatory diagnosis has been brought, and the exactness with which a practiced ear is enabled to appreciate the deviations from natural structure and function within the thoracic cavity,

the most experienced practitioner will sometimes be mistaken in his opinion, or, at any rate, puzzled by modifications of disease and conflicting evidence, which tend to obscure the clear signs of the presence of fluid. Under such circumstances it is always advisable, previously to tapping the chest, to explore the part in such a manner as shall, at any rate, inflict no injury on the patient, although its result may convince us of the inutility of a farther operation. For this purpose the grooved needle was invented and used; but, although applicable to many other purposes, it is at best a clumsy and inefficient instrument for exploring the chest, and frequently has left us as much in doubt after its withdrawal as previous to its introduction. The groove is so easily obstructed by the tissues through which the instrument passes, or by small particles of lymph, as to render the escape of fluid which may really exist a matter of great uncertainty; while, on the other hand, provided the needle has to traverse an oedematous condition of cellular membrane, so frequently the case, the serum which exudes from the subcutaneous tissue may be supposed to come from the pleural cavity. Thus, the evidence afforded by the instrument, both positive and negative, is alike fallacious; and its liability to this double deception renders it nearly useless.

An instrument admirably adapted for exploring the chest, and indeed generally applicable for elucidating the nature of many other forms of obscure disease, has been contrived by Dr. Babington. (See Plate, fig. 1.) It consists of a needle contained in the smallest-sized canula: this is passed between the ribs into the suspected spot; the needle is withdrawn, and the escape of fluid from the tube at once indicates the existence and the nature of the abnormal secretion. A farther investigation, as to the size and direction of the cavity, may also be obtained by introducing a fine silver probe through the canula. So useful do I consider this instrument, that I am now in the habit of employing it in almost every case of suspected hydrothorax previously to attempting the evacuation of the fluid by the larger trochar. The pain it inflicts is of the most insignificant kind: I believe it to be quite incapable of doing injury to any thoracic viscus which, under an error of diagnosis, it may happen to pierce: it

prevents the mischief which, under such circumstances, might have been produced by a larger instrument; and at all events enables the surgeon to avoid the operation of dry tapping, which is alike unsatisfactory to the operator and the patient, both of whom had reason to expect a different result. I was once requested by an eminent physician to tap a person's chest at a spot which he had indicated, after a careful examination. I first introduced the exploring needle: no sensations like that of entering a cavity was conveyed to the finger, and no fluid escaped. On withdrawing the canula, a minute portion of pulpy matter occupied its mouth; and I suspected that I had entered a fungoid tumor. At the subsequent post-mortem examination, a large medullary mass was found to occupy a great portion of the thoracic cavity: the puncture was not followed by the slightest inconvenience, or symptoms of any kind.

I will make a few remarks on the size of the instrument which I employ for paracentesis thoracis; for I consider this to be a matter of considerable importance as regards the facility of introduction and the diminished liability to injury, as well as the successful result of the operation. The trochar and canula which I have found best adapted for general use is about one-twelfth of an inch in diameter, and about two inches in length, exclusive of the handle. (Vide Plate, fig. 2.) In some cases where there exists great œdema of the subcutaneous tissue, a longer instrument might be required to penetrate the pleural cavity; and I have in more than one instance found it necessary to pit the skin by pressure with the finger, before the canula could be pushed far enough to reach the fluid. I prefer a circular to an oval instrument, as the former is more easily introduced and does less injury to the intercostal muscles, whose fibres are perpendicular to the long diameter of the oval canula. I am aware that I use a much smaller instrument than is usually employed in paracentesis; but I think it has many advantages: its introduction is easy, and attended with so little friction, that the operator feels his way before him, and is immediately conscious when he has entered the cavity of the chest. It gives but very slight pain, as it does little more than separate instead of lacerating the tissues through

which it passes; and it is calculated to elude the nerves and vessels, whose immunity from injury no skill or care of the operator may otherwise be enabled to secure on every occasion. On its withdrawal, the opening which it has made becomes immediately and permanently closed; thus at once restoring the integrity of the cavity which has been entered. It is adapted to all ages from the infant to the adult, and can hardly fail to find its way between the ribs, however narrow the intercostal space may be from age or formation, and however nearly the bones may have become approximated during the progress of the disease. And I may here remark an error which appears to have crept into almost every description of the external diagnostic symptoms of the presence of fluid in the chest. I find it almost universally stated, that the ribs are abnormally separated from each other so as to widen the intercostal spaces; whereas I have found that the reverse condition almost always prevails. In almost every instance of accumulation of fluid in the chest, I have found the ribs drawn up and consequently approximated to each other, so as to diminish the width of the intercostal spaces. As far as the ribs are concerned, the chest is shortened in its dimensions from above to below, while it is expanded in its antero-posterior and lateral dimensions. This is more especially the case when the disease is of long standing, and when extensive old and permanent adhesions exist between the parietal and pulmonary pleura, when the lungs have become incapacitated by pressure from admitting air, and when the affected side continues nearly or perfectly motionless during the efforts of respiration. The chest, in fact, as far as the position of the ribs is concerned, remains in a state simulating that of permanent inspiration; and hence the preternatural bulging and increased volume when measured and compared with the other side; an alteration which I think has been erroneously ascribed to a general expansion of the thoracic walls, from the pressure of the fluid which has accumulated within.

The most important benefit, however, which results from the use of a small canula is, that it ensures a slow and gradual evacuation of the fluid, and enables us to avoid the

admission of air; both of which are, in my opinion, matters of great importance in the operation, more especially where the effusion is of recent occurrence, and when we may therefore reasonably suppose that the lungs have not become permanently collapsed by the pressure. We may confidently expect that a slow evacuation will allow a better opportunity for the lungs to expand, and enable us more effectually to empty the cavity. It is not only much more agreeable to the feelings of the patient, but undoubtedly much safer as regards the immediate and future results of the operation; as it obviates the unpleasant syncope and not unfrequently the alarming state of collapse which is likely to attend the sudden and rapid withdrawal of a large quantity of fluid. In Case 1, when I evacuated about forty ounces of serum through a large oval canula, the pulse suddenly became tremulously intermittent, then altogether failed, and the collapse was so severe that, for a short period, serious apprehensions were entertained for the life of the patient. It also appears probable that in this case a laceration of the surface of the lung took place during the operation; it is difficult to say from what precise cause; but there can be little doubt of a communication having been established between the bronchial tubes and the pleural cavity, as, during the succeeding twenty-four hours, he continued to expectorate a quantity of fluid precisely similar in character to that which had been withdrawn by the trochar. It has been often asserted that the admission of air into the cavity during the operation of paracentesis is not only harmless in its consequences, but a matter of no importance as regards the immediate relief of the patient from the symptoms under which he is labouring. I must express my decided dissent from both these opinions. I consider the admission of air into the cavity as highly injurious in every respect, and take the utmost care to avoid such an occurrence. If the withdrawal of fluid which, by its pressure on the lungs is producing dyspnoea and distress, be considered advisable and necessary, the admission of another fluid to occupy the place of the former is surely to be deprecated. It is well known that, in the healthy state, the admission of air into the pleura through the parietes produces collapse of the lung, and that,

if this occur on both sides, the consequences are immediately fatal. It may therefore be inferred that a modification of similar mischief must take place from a similar cause when the parts have become altered by disease: air may produce less pressure and be more easily got rid of by absorption than water; but still it must be allowed that its admission during the process of tapping is at best a substitution of a minor for a greater evil, and must tend to mar the immediate benefit which the operation was otherwise calculated to afford. It has been contended that air does not act injuriously on the internal living tissues of the body, except perhaps from its mechanical pressure; and this view is supported by the fact, that no particular constitutional symptoms are produced by its presence under extensive forms of emphysema. But these arguments and examples do not apply to those cases, where air has gained admission into the cavity of a pleura which has already become the seat of a morbid effusion, either from obstruction or inflammatory action. The recorded histories of numberless cases, as well as my own experience, tend to prove that in both these forms of disease the consequences are mischievous. In the old operation for empyema, when a bold incision was made into the chest, leaving a permanent opening which allowed free egress of the purulent fluid and as free an ingress to air, the result was almost invariably the same. The cavity which, when it was first opened, was found to contain a bland inodorous sero-purulent fluid became speedily converted into a fetid abscess; the secretion was increased ten-fold, and assumed the most offensive character; the comfort of the patient was destroyed by the constant discharge and the necessity for frequent injection and ablution for the purposes of cleanliness; irritative fever and prostration supervened, and the individual sank at an earlier period than if he had been left in the hands of nature, without the interference of the surgeon.

I have observed on some occasions, after the operation of tapping for *hydrothorax*, that a change has taken place in the character of the fluid which either had been left in the cavity or had become subsequently secreted; that when, after the lapse of a short period, paracentesis has again been performed, the fluid had lost the limpid transparency of pure

serum and become turbid and discoloured, approaching more in its character to the fluid of empyema. By calling to mind what had occurred at the time that the chest was punctured, I have been inclined to ascribe this alteration to the admission of air; and more than one post-mortem examination has induced me to believe that this accident, if I may so call it, has given rise to a fresh attack of unhealthy inflammation in the walls of the cavity, and a fresh effusion of recent lymph on their surfaces. My limited experience does not enable me to speak with any degree of certainty in this matter; but it has had the effect of rendering me sedulously careful to exclude air during the operation. Several instruments have been contrived that will allow the escape of the fluid, and, at the same time, prevent the introduction of air; but I have not found them so convenient or manageable, or so well adapted to the purpose, as the small trochar and canula which I have recommended.

It now only remains for me to describe the operation itself; which, as regards the pain it inflicts, is so trifling, that by avoiding all unnecessary display and preparation, the patient may be led to consider it as little more than the sequel of the discipline to which he is occasionally subjected when it is considered essential to make a thorough examination of his chest; the same position of the body being alike adapted for the one process as for the other. It will be found most convenient to let the patient sit *across* the bed, so as to admit of his body being readily lowered and supported over its edge. The spot having been determined upon, it is advisable to make a small puncture in the skin, just at the upper edge of the rib, with a narrow-bladed lancet; through which opening the exploring needle and subsequently the trochar may be inserted. This preliminary step is not absolutely necessary; but as the skin is by far the most impenetrable and resisting of the tissues to be traversed, its previous division will render the introduction and withdrawal of the canula more easy, less forcible, and attended with a minor degree of pain and alarm to the patient. The exploring needle having been first introduced and the presence of fluid ascertained, the trochar and canula may then be carried into the chest through the same track, giving the instrument a slight obliquity

upwards, which will enable it to clear the edge of the rib. The depth to which the trochar must be passed will of course depend much on the thickness of the parietes, the presence of fat, muscle, or œdema, for which due allowance should be made; and, in most instances, the penetration of the pleura will be appreciated by the sensation conveyed to the fingers of the operator, especially if the integument has been previously incised so as to diminish materially the friction.

The remainder of the operation consists of getting rid of as much fluid as the strength and condition of the patient will bear, and carefully avoiding the admission of air into the cavity. On withdrawing the trochar, the fluid will at first be found to flow in a steady and equable stream, slightly augmented in force at each expiration. After the lapse of a shorter or longer period, the flow will become checked at each inspiration, and then the body of the patient should be gently lowered into an horizontal posture, and turned slightly on to the affected side, so as to bring the cavity directly over the opening; and in this position he should be duly supported by assistants. The fluid will now recommence flowing in an uninterrupted stream; and when it again begins to flag, a still further quantity may be obtained, if the state of the patient permit it, by directing an assistant to make steady and continuous pressure on the lower part of the chest, by grasping it on either side with the hand. This may be kept up for a period varying from a few seconds to a minute, until a continuous stream can no longer be obtained, when the canula should be immediately withdrawn. The greatest care should be taken to remove the tube and thus close the opening, while the chest of the patient is yet in the grasp of the assistant; for, if he relax the pressure while the communication with the pleural cavity be still open, air will infallibly rush in.

During the whole process of evacuation the unremitting attention of the operator should be directed to the stream of fluid, which he should never allow to become completely interrupted during the effort of inspiration. The admission of the slightest quantity of air is immediately indicated by a peculiar sucking noise which cannot be mistaken, and which

should be the signal for the prompt withdrawal of the canula. The wound requires nothing but the application of a small dossil of lint and a strip of plaster; and the patient may then be laid down on the bed. If he complain of faintness during or after the operation, some wine or ammonia may be given.

I conceive that, in recent cases of effusion, a moderate compression of the chest, as recommended above, is calculated to act beneficially, not only in procuring a more complete evacuation of the cavity, but as tending more quickly to restore the permeability of the lungs which have suffered from the pressure of the fluid; inasmuch as the resiliency of the parietes will dilate the thorax as soon as it is released from the grasp of the assistant, and thus produce a tendency to a vacuum within, which can only be met or counteracted by an expansion of its contents.

The proportion of fluid which we may be able to evacuate will probably depend not so much on the quantity effused as on the period which has elapsed since its presence was first indicated; and, provided the withdrawal of a certain portion relieves the symptoms of distress, it is a matter of minor consideration whether that portion be a greater or smaller integral part of the entire volume contained in the thorax. I have seen the evacuation of a dozen ounces of fluid give instantaneous relief to the severest dyspnœa and distress in patients who had become the subject of effusion; more especially when the secretion had been rapidly produced, as the result of acute inflammatory action, and when the fluid coagulated spontaneously after its removal from the cavity. The simplicity and safety of the operation, and the little pain which it inflicts, render its repetition a matter of no moment; and the patient, having already experienced its relief, will be willing nay anxious to undergo a second or a third trial.

One of the principal objects of this paper has been to shew that the operation of paracentesis thoracis, both as an exploratory and a remedial measure, is easy, practical, and, if properly conducted, safe: that, as a means of diagnosis, it is little more annoying to the patient than the ordinary examination by percussion: that, even as an experiment, it is a harmless one: that, where effusion exists in combination with other thoracic affections, the withdrawal of the fluid may

remove one set of symptoms, rendering the case simple, more open to the investigation of the physician, and, perhaps, more amenable to remedies: lastly, that in many instances it may be made available to relieve conditions of extreme distress and misery, and, at any rate, to protract, if it cannot save, the existence of the individual.

CASE I.

Hydrothorax—Ascites—Enlarged Liver—Paracentesis Thoracis four times—Paracentesis Abdominis three times—Partial Recovery.

Condensed from Notes, by J. H. BROWN, M.B.

I. P——, aged 22, admitted July 27, 1843, under the care of Dr. Addison. By occupation a gardener and residing at Twickenham, but lately employed upon a railroad, short, stout, and of light complexion, he had enjoyed good health, with the exception of venereal affections, and rheumatic pains arising from cold while under the action of mercury, till ten weeks before admission, when he was attacked, after dinner, with a fulness, pain and tension in the epigastrium, together with eructations and some tenderness on pressure. These symptoms continued; and in a few days his respiration became short and oppressed, and he had a hard cough with mucous expectoration. Blisters were applied to the right side, with relief; but he had ever since been troubled with flying pains of the chest and at the scrobiculus cordis, dyspnoea, and cough, nocturnal perspirations, and coldness of the feet, accompanied with scanty, turbid urine. Upon admission, the nose, lips, ears, and fingers were rather livid: he complained of dyspnoea and sense of fulness in the abdomen, increased by lying on the right side, or upon the back, or upon exertion: the tongue was clean and moist; the appetite good; the skin dry, but soft; the bowels regular, and the evacuations bilious; the urine natural, about 3xvi. in twenty-four hours, sp. gr. 1020; pulse 100, irregular, unequal, small, and feeble. The chest appeared naturally broad and well-formed. The left side was more rounded and full than the right, was raised but very little upon inspiration, and was

tender upon pressure in the intercostal spaces: it was also universally dull upon percussion; and the natural vibration upon speaking or talking was absent. The integuments were œdematous; and a painful enlargement of the mamma existed on this side. Respiration was absent inferiorly; became tubular upon expiration as the stethoscope was passed upwards, and puerile, with sonorous sibilant ronchi, above the spine of the scapula. Below the scapula the voice was bronchophonic; and over that bone it was more decidedly ægophonic. Similar sounds, somewhat modified by position, were heard anteriorly. Nothing remarkable was observed on the right side, excepting a rather more extended dulness than natural inferiorly. The impulse of the heart could not be felt on the left of the sternum; and its sounds were most distinctly heard over the centre, or rather to the right of the lower half of that bone. The abdomen was tumid, and fluctuated upon percussion. The integuments were fat; and on the left side, together with those of the left side of the chest, the loins and the legs were œdematous. The liver could be distinctly felt two or three inches below the ribs. He was ordered to be cupped upon the right side, and to take calomel, antimony, and opium. On the 31st, the gums being affected by the mercurial, and no relief obtained, paracentesis thoracis was performed, and about fifty ounces of clear straw-coloured fluid were withdrawn, in which, upon cooling, there formed a large, loose, transparent coagulum, which floated in a small portion of clear serum, the specific gravity of which was 1020. He was very faint after the operation, but soon rallied after taking a little wine; the pulse was fuller and more regular; the respiration more distinct in the upper part of the affected side; ægophony disappeared from its former locality, and was now present at the lower part of the chest. He felt comfortable and relieved, and was ordered to have a blister, and to take a saline draught with spirits of nitre, and tincture of digitalis. An hour after the operation he was seized with violent coughing and copious expectoration, at first of mucous, and then of serous fluid, similar, in its physical and chemical qualities, to that withdrawn by the trochar. It subsequently became tinged with blood, and was discharged from the nose and mouth without

the effort of coughing or vomiting. He became faint, but had no pain or increased dyspnœa, though the discharge continued till the next morning, when the fluid became less in quantity, and more mucous and frothy. Præternatural resonance on percussion, and absence of respiration, were now observed in the upper part of the side: there existed less lividity of the features; and his general aspect was much improved. The expectoration gradually lost its sero-albuminous qualities, and by the 7th of August had become mucous, but was still tinged slightly with blood. The abnormal resonance on percussion slowly disappeared: slight pleuritic rubbing became audible; but the respiration was still feeble, excepting between the scapulæ and in the axillary and infra-clavicular regions; the abdomen decreased in size, and fluctuation therein was no longer discernible; the œdema of the legs diminished; the sounds of the heart became louder and more distinctly audible behind and to the left of the sternum; but the inability to lie on the right side continued, and he still had dyspnœa upon exertion.

Soon after this he came under my (Dr. H's) care, in consequence of the absence of his physician. It would be unprofitable, as well as tedious, to repeat similar reports of his condition. It may suffice to say, that he took mercury in a variety of forms, and diuretic medicines of many kinds, and in different combinations, without any, or with very little, effect; and that in consequence of increased dyspnœa and distress his chest was tapped three times. The operation was, on each occasion, followed by great relief; and he had not any return of the expectoration of serous fluid; or the slightest consequent inconvenience of any sort. On the first of these occasions thirty ounces, on the second forty ounces, and on the third seventy ounces of fluid were withdrawn. Previously to the last operation he had been greatly distressed. The left leg and arm had become so large from œdema, as to be suffused with a tender erythematous rash, which was advantageously treated with spirituous saturnine lotion. The redness disappeared, but the swelling continued. The arm was directed to be raised upon pillows. The next morning the œdema of the arm had almost disappeared; but the dyspnœa had increased to such a sad degree as to threaten

suffocation, and imperatively to demand the *immediate* repetition of the operation of tapping. He was immensely relieved by it, and in a few days was able to get up and walk about. From this time, which was about the end of September, he has suffered little or no inconvenience on account of the effusion into his chest; and has never been confined to bed, excepting when the operation of paracentesis abdominis has become necessary in consequence of accumulation of serous fluid in the peritoneum, and a few days after its performance. This latter operation has been performed three times, and has been uniformly followed with relief. It will probably be soon required for the fourth time, as fluid is again fast accumulating.

On this day (March 6, 1844) Dr. Brown reports that the abdomen measures thirty-seven inches in circumference, having been reduced to thirty-five inches by the last operation on February 28th. He feels, however, tolerably comfortable, and the cough is not very troublesome. The urine is scanty and turbid as before, and he complains of unpleasant distention, particularly after eating, and towards evening. Upon examination the left shoulder is found to be rather lower than the right; and there exists slight lateral distortion towards the left side, the intercostal spaces of which are much narrower than those of the right side. The entire left side of the chest appears contracted, is less prominent, and measures an inch less than the right. General dulness on percussion, deficient elevation of the ribs, imperfect and distant respiration, decreased resonance of the voice, and of the vibration communicated to the hand, at present exist on the left side, but are much less marked in character at the upper than at the lower part. On the right side, the resonance on percussion is natural, and the respiratory murmur is only occasionally obscured by a little mucous rattle. The sounds of the heart remain as before. The pulse is soft, full, and regular, but, synchronously with the act of inspiration, as had been frequently observed before, the beat becomes much smaller than at other times. Some pleuritic rubbing, which formerly existed on the right side, has entirely disappeared. He can now lie, and he occasionally sleeps, upon the right side; but he still has slight oedema of the

inferior extremities, and enlargement of the left mammary gland. The abdomen is considerably distended with fluid; and the enlarged liver can still be distinctly felt projecting some distance below the ribs.

CASE 2.

Pleuritic Effusion from Latent Pleurisy—Paracentesis twice performed—Recovery.

WM. C——, aged 27, a coachman of light complexion, had been in the hospital for some months for secondary venereal eruption, supposed to have been aggravated by the use of mercury previously administered for both the primary and secondary affection during the course of the last two years. He appeared to be little affected by treatment. On the morning of Dec. 1, 1842, I was requested by his dresser to examine the chest, in consequence of dyspnœa, which had been recently observed, and had been gradually increasing for the past week. He had suffered no pain whatever; he had no cough, and no febrile excitement; the tongue was clean, the skin natural, and the pulse rather feeble. He had very great dyspnœa, which was much increased by lying on the right side. The heart was not to be felt in its ordinary situation, but its impulse was distinctly perceived on the right of the sternum. *Physical signs*:—The entire left side, both before and behind, i. e. as high as the clavicle anteriorly and the spine of the scapula posteriorly, was quite dull on percussion. No respiration could be heard at any part of this side, except immediately below the clavicle before, and in the interscapular region behind, where it possessed a pure tubular character. The voice was more shrill than natural in the left interscapular region, but was indistinct below the clavicle, and scarcely at all audible in any other part of the side. Mr. Cock, at my request, performed the operation of paracentesis; and, having first used the explorator to certify the presence of fluid, introduced a small trochar at the posterior and inferior part of the left side of the chest. About six ounces of clear greenish-yellow serum were drawn off, with slight relief to the patient. Ordered,

Pil. Hydrag. gr. iv. Opii gr. fs. m. ft. Pil. nocte maneque sum.

Liq. Potassæ m xv. Potassii Iodidi gr. iij. Inf. Gentian. C. ʒifs.
m. ft. haustus ter die sumend.

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Dec. 2. This day his pulse were considerably fuller and stronger, and there existed some heat of skin, with a flushed face. In other respects he was the same. Ordered,

Ven. Sect. ad ℥viij.—Empl. Lyttæ lateri sinistro.—Pergat.

Jan. 6. The febrile symptoms were immediately and permanently subdued by the venesection; but his dyspnœa and other symptoms continued nearly as before, and the physical signs of his complaint were unchanged. He had hitherto continued the medicines first prescribed: the blister had risen, and discharged freely. He was certainly not better, though not considered materially worse; but late in the evening of this day Mr. Cock and I were called to him, in consequence of excessive dyspnœa threatening suffocation, arising from the increased accumulation of the effused fluid. Upon our arrival he was gasping for breath, propped up in bed by pillows, with much anxiety of expression, a clammy state of the surface, and feeble pulse. The chest was again tapped at the same part as before; and, by the assistance of pressure upon the ribs, thirteen ounces of the same kind of fluid as before were evacuated. In a few minutes he felt no inconvenience whatever from the operation, and in a very short time expressed himself as being much relieved thereby. From this time his recovery commenced.

Rep. Empl. Lyttæ; et Pergat.

12. Dulness gradually decreasing, and breathing easier. He had continued his medicine, which appeared to agree perfectly.—Pergat.

15. Some dulness still remained upon percussion; but the heart had in a great measure resumed its normal situation. It was now to be clearly distinguished beating below the left nipple, and could not be discovered at the right of the sternum. The respiratory murmur was gradually returning in every part of the lung. Mouth tender from mercury.

Omittant Pilulæ.—Rep. Mist. et Empl. Lyttæ.

30. He had been constantly and gradually recovering up to this date, never having suffered from any return of the febrile affection which appeared on the second day of the treatment. He had now no dyspnœa; could lie upon the right side without the slightest inconvenience; and was ab-

solutely discovered carrying a pail of water up two pair of stairs, to assist one of the nurses. The heart was felt in its natural situation ; and respiratory murmur could be heard, though of a hoarse and rough character, in every part of the side : no resonance of the voice could be discovered ; and the ribs moved with tolerable freedom. Being free from any affection of the chest, and his eruption having much decreased, he now left the hospital. He was re-admitted, on the 13th of February 1843, for an increase of his venereal rash ; but he had not suffered from any return of the affection of the chest, the examination of which afforded no indications of disease, excepting a little deficient pliability of the ribs, the probable result of pleuritic adhesion. After a few weeks residence, he again left the hospital. He was admitted into the hospital for the third time, on account of the venereal rash, on Jan. 13, 1844. He is still there. He has not complained of any dyspnœa, or of any pain, cough, or other inconvenience from his former attack of pleuritis. On inquiring after his condition, and on examining his chest this day (Feb. 26), the following are found to be the symptoms and the physical signs which he now presents. On his face, head, and back exist some remains of his venereal eruption. He states that he can run up stairs, and lie upon either side, as well as previously to his attack. He has some cough, which prevents his lying comfortably on the back. His respirations are 22, and his pulse 96, in the minute, and feeble. The chest is not contracted on the left side ; and though the whole does not expand fully and freely upon inspiration, there is no perceptible difference in the two sides. The heart is felt and heard to beat, though feebly, below the left nipple. The entire chest sounds well on percussion, and the respiration is audible in every part, though generally, and I think especially in the base of the left lung, mixed with mucous and sonorous rattles, the probable consequence of old bronchitis. In no part is the resonance of the voice greater than natural.

The operation in this case was at first advised because it was considered desirable to administer as little mercury as possible in the cure of his complaint, in consequence of his being at the time a sufferer from the injurious effects of that medicine. On the second occasion it was performed for the

purpose of relieving most serious and alarming symptoms. In both respects it appeared to succeed perfectly. The recovery seems to be complete.

CASE 3.

Empyema and Pneumonic Abscess from Fractured Ribs— Paracentesis unsuccessful—Death.

E. M——, a hearty-looking, red-haired, Irish sailor, aged 58, who was present at, and talked with great satisfaction and zest of, the bombardment of Algiers, came into the hospital for fractured ribs April 7, 1842. The accident arose from his being run over by a cart. He was bandaged and treated as usual on such occasions; and in about a fortnight was considered to be proceeding so favourably as to admit of his becoming an out-patient. But on April 22 he was suddenly seized with great oppression of breathing, anxiety of the countenance, and incapability of motion from fear of suffocation. The pulse were feeble, but not particularly depressed; the skin was cool, but not clammy; the tongue was natural. The flannel bandage was removed from the chest, and the left side was found to be unnaturally resonant on percussion; the respiratory murmur was deficient at its lower part; but no fistulous breathing was discoverable. On the right side some tenderness existed; but by auscultation and percussion I was enabled then to discover nothing remarkably different from health. He was ordered to be bled to six or eight ounces; to take a strong antimonial opiate pill with two grains of calomel; to be kept perfectly quiet; and to remain without the bandage. The next day he was much in the same state, both as regarded his general symptoms and physical signs. Mr. Cock now saw him with me; and I stated it as my opinion that pneumo-thorax had taken place on the left side, from laceration of the lung. We agreed that it would be well to re-apply the bandage; to take a little more blood from his arm, as his pulse had rather risen in power; and to put him, and keep him under the influence of opium. He was therefore ordered to take a grain of solid opium directly, and half a grain every six hours; and was allowed to take mild nourishment freely. He was thereby kept very quiet, and went on gradually and constantly improving in every respect, and

particularly in his breathing, till May 5, when he was sufficiently well to get up and walk about. He however again complained of pain upon pressure in the right side, in which there now existed marked dulness on percussion, deficient elevation of the ribs, and tubular breathing; while the left side of the chest appeared comparatively healthy. Pleurisy with empyema was supposed to be present; and he was ordered five grains of blue pill and half a grain of opium at night, and a draught, containing iodide of potassium and liq. potass, in a bitter infusion, during the day. He however got worse. The dulness of the right side increased. From there being such evident mischief here, and from the patient uniformly directing attention to this part, the condition of the left side was forgotten, or not examined. He soon began to cough and to expectorate—at first muco-purulent matter, then imperfect pus, and at length dirty-brown pus itself. His breathing became again exceedingly difficult; and as it appeared evident that fluid existed in the right side, either in the cavity of the pleura or in the lung itself, which, from the presence of hoarse bronchial respiration both before and behind, was supposed to be extensively adherent, I was anxious that the explorator should be introduced, for the purpose of ascertaining its presence, and possibly of relieving his distress. This was accordingly done, in my absence, by Mr. Morgan, between the fifth and sixth rib, a little below and to the outer side of the nipple. No fluid was evacuated, and no symptoms, good or bad, resulted from the operation, though I believe some remarks were pleasantly made respecting my diagnosis. The poor patient went on much as before, but got weaker day by day. He was ordered wine, porter, and quinine, to support his strength, but without any perceptibly good effect. I was still persuaded that a collection of fluid existed in the right side of the chest, though it had not been reached by the former operation; and I was desirous that paracentesis should be again performed, for the purpose of mitigating the poor fellow's sufferings, rather than of effecting any permanent benefit. This, however, was not done; and the man, after being long moribund, died, July 27, 1842.

INSPECTION, THIRTY-SIX HOURS AFTER DEATH.

Chest.—On reflecting the soft parts, and removing the sternum, the course of the puncture was first investigated. The instrument was found to have neither penetrated the lung, nor to have entered any collection of fluid. A firm cicatrix clearly proved that it had passed into, but not trans-fixed, the diaphragm. The pleura covering both lungs adhered firmly to the parietes anteriorly; and both lungs, while *in situ*, appeared to be free from disease. But on separating the anterior adhesions of the right lung, the finger passed into a narrow and defined cavity in the pleura, bounded on every side by adhesions, and containing between three and four pints of thick sero-purulent fluid, very nearly resembling pure pus. The cavity was situated at the side and base of the chest. It contained no air, being completely filled by fluid, which, by its pressure upon the diaphragm, caused that muscle to bulge into the abdomen posteriorly, and formed a round fluctuating pouch behind the liver, the size of a very large orange. The cavity was lined with a dense layer of flocculent lymph. The lung was firmly adherent behind as well as before, and was generally dark, smooth, and fleshy, from simple compression. But at the anterior edge of the lower lobe there was a portion solid, grey, and friable from pneumonia, the pleura covering which had ulcerated, and thus opened a communication between the defined cavity of the serous membrane and a bronchial tube of considerable calibre. The left lung adhered pretty generally and firmly to the pleura costalis, and appeared, at first, tolerably healthy. Upon an incision being made into it, a cavity the size of a pullet's egg was discovered in the lower part of the upper lobe. Over the space of a square inch at least it approached very nearly to the surface. Here the pleura was dull, smooth, and of a dark leaden hue; and over this space there appeared to be but very questionable traces of any pulmonary tissue. The cavity was irregular in form, and contained a little dark-coloured pus, and a portion of lung, the size of the little finger, dark, dull, soft, and friable, which was attached to the parietes of the cavity only by a very slender portion of the same substance. The parietes of the cavity were formed of a thin layer of consolidated lung. No gangrenous odour was discernible.

The other parts of the lung were healthy, and, like the right, contained no traces of tubercular matter. Three ribs were observed to have been broken, and to have firmly united, on the left side; and two to have been broken, but not separated, on the right side. In these there was not the slightest trace of any reparative process. The other organs being healthy, it is unnecessary to particularize them; but it may be observed, that the liver, far from being depressed by the effusion, passed up considerably higher than naturally behind the lower ribs.

Whether I was correct in the opinion I expressed as to the presence of pneumo-thorax upon the left side in this case, and the air was subsequently absorbed, must remain undetermined. The existence of a cavity close to the surface of the lung renders it not improbable that such had really been the case, particularly when taken in connection with the sudden supervention of symptoms which usually accompany that accident. Whether the patient would have been permanently benefited by the evacuation of the fluid effused on the right side must also continue uncertain; though the very little disease existing in other parts induces me to think that such a result might have followed a more successful operation.

CASE 4.

Chronic Pleuritic Effusion—Paracentesis—Recovery.

M. B——, a delicate-looking child, of light complexion, aged nine years, was brought to the hospital as an out-patient, Sept. 7, 1843; but, on account of her extremely severe illness, was recommended to be taken in by Dr. Bird, and in consequence of the absence of Dr. Addison, was placed under my care. The history of her illness was obtained on the following day by one of the pupils, and was as follows:—Five weeks before, she was attacked with “inflammation of the bowels,” and was for four or five days attended by a druggist, who applied leeches, &c. For about a week she appeared to be pretty well; but a fortnight since she was attacked with severe pain of the left side, which prevented her from taking a deep breath, or lifting her arm; pains of the limbs and head;

cough, and expectoration of a large quantity of yellow matter, together with retching, but without vomiting: the skin was said to have been hot, and her tongue to have become black: the bowels were open twice or thrice daily. For this last attack she had been submitted to no treatment. When visited, after she had been some time in bed, she was pale, had an anxious expression of countenance, lay upon her left side, and was unwilling to be moved. The respiration was much hurried, and the dyspnoea was considerably increased by any motion of the body; and when placed upon her back she gradually and almost imperceptibly glided again to her former position. She had no cough; the tongue was moist, furred in some parts, and morbidly clean in patches; the pulse, when she was quiet, were 140, and feeble; and the respiration 40 in the minute; the skin was cool.

Physical signs.—Enlargement and fulness of the left side were obvious upon inspection. The intercostal spaces were level with the ribs, which were but slightly elevated during inspiration, and were thereby forcibly contrasted with those of the opposite side. The circumference of the chest measured twenty-three and a half inches; and by passing a tape below the nipple, from the spinous processes to the centre of the sternum, the admeasurement of the right side was found to be eleven inches, while that of the left reached twelve inches and one-third. There existed general dulness of the left side on percussion, together with absence, or great distance of respiration, and of the voice, though these could be but imperfectly investigated from the continual restlessness of the little patient. The heart could not be felt, though it was indistinctly heard below the left nipple; it was both heard and felt on the right of the sternum. The dulness on percussion existed up to, and indeed was most marked in its character below, the left clavicle, in which situation tubular breathing and imperfect pectoriloquism could be distinguished. The right side presented nothing remarkable, excepting the position of the heart. The child was considered to be too low for any operation at that time, and was therefore ordered some julep. ammon. occasionally, and hydrarg. c̄ cretâ gr. ij. bis die, with beef-tea and arrow-root for diet. The next day, after the physical signs had been again care-

fully investigated, Mr. Cock introduced the explorator at the posterior and lower part of the left side. A few drops of thick pus escaped along its small canula, and at the same time the child coughed and expectorated a little purulent frothy fluid. A small trochar was now passed into the same opening; but, instead of pus, there escaped a jet of serum, at first limpid, but afterwards slightly tinged with blood. The whole amounted to not more than a few drachms. At the same time a few bubbles of air passed either from or into the cavity of the pleura. Its direction could not be ascertained, as the transit was only recognised by the sound it produced. A fine probe, now introduced through the canula, clearly indicated that a space existed in the pleura to the extent of several inches, free from solid obstruction. Still no fluid escaped. It was therefore thought best to withdraw the canula, and to close the opening. The patient appeared to suffer nothing more after the operation than previously, and in a very few minutes was lying quietly on her left side, as before.

Rep. Pulv.—Capiat Potassii Iodidi gr. i. Liq. Potass. m. v.
Inf. Aurantii ʒi. ter die.

The next day she was reported to have expectorated some sero-purulent fluid; but as she was lying quietly, and breathing easily, she was not disturbed.

Sept. 9. She was still breathing with freedom; and as the ribs were now raised more obviously, and the intercostal spaces were in a slight degree marked by depressions on the surface, it was thought well to do nothing in the way of operation at that time. She still generally lay upon the left side; but she could now sit up in bed, and even turn upon the right side without much inconvenience. She had no heat of skin; her tongue was more natural in appearance; the pulse were 120; the respirations 40 in the minute, but performed without apparent distress; the bowels were confined. Dulness still existed over the whole of the left side on percussion, both before and behind, but was still most decided in its character below the clavicle.

Capt. Olei Ricini ʒij. statim, et pro re nata.—Pergat.

Sept. 13. She had been visited daily; but the repetition of the reports of improvement would be tedious to the reader. On each occasion she was found free from distress, pain, constitutional disturbance, or much dyspnœa. The ribs were now clearly raised during inspiration; the intercostal spaces were obviously indicated by almost the natural depression; she had a very slight cough, and expectorated a little yellow matter, floating on, but not incorporated with, some serous fluid. The heart was but indistinctly felt on the right of the sternum; dulness on percussion existed posteriorly, and at the upper part of the side anteriorly; the infra mammary region was resonant on percussion; the breathing was heard rather more distinctly throughout, and was now tubular posteriorly. There existed no physical indication of any communication between the pleura and the lung. She could not, however, be induced to cough or talk during the examination, though I was informed, that when I was absent she talked cheerfully, sat up in bed, and turned to the right side, or on the back, without difficulty or inconvenience.—*Pergat.*

Oct. 3. She had been going on in every respect satisfactorily. This day she had a little catarrh, but with scarcely any cough or dyspnœa. Ordered,

Haust. Salin. ʒi. ter die.—Rep. Pulv.

5. From this date Dr. Addison took charge of his cases, and this patient among them was transferred to his care. He ordered,

Sp. Æther. Nitric. m xv. ʒ. sing. dosibus; et Pulv. Sodæ c Hydrarg. gr. iv. (containing Hydrarg. Chlorid. gr. ¼) omni nocte.

which she continued till the

25th; when, from being transferred to another ward, she again came under my care. She now ran about the room apparently in perfect health; her colour had returned; she was much stouter, had no cough, and no dyspnœa. The gums and tongue were not in the slightest degree affected by the mercurial, which she had continued up to this time. Her appetite was good; her tongue clean; her skin natural; the respirations 30; and the pulse 140 in the minute, but probably increased in frequency by the excitement produced by

the examination. On examining the chest, little if any difference appeared in the two sides as regarded either size, shape, or elevation upon inspiration. Some, but very little, dulness existed in the posterior part of the left side: the respiratory murmur could be heard over the whole, with the exception of the præcordial region; but it was not quite so pure or so distinct as upon the right side. No increased resonance of the voice, nor any morbid rattles, could be discovered. The girth of the entire chest was twenty-one and one-third inches: the admeasurement of the right side ten and a half inches, and that of the left side was also ten and a half inches; leaving, as on the former occasion, a little disparity, which is very common in such cases, between the sum of the two halves and the entire circumference. In the beginning of November she went, for a few days, into the clinical ward, but no further notes were taken of her case. She was discharged in good health about November 8.

From what cause a larger quantity of the liquid effusion did not in this case escape, upon the introduction of the trochar, I am unable to explain. That it existed in very considerable amount there can, I think, be no doubt. Whether the operation effected good it would be difficult to determine. That it was not productive of evil appears certain, as the patient began to improve, in every respect, from the time of her admission; and her improvement was steady and progressive, without check or hindrance, excepting a slight catarrh, till she was discharged.

CASE 5.

*Hydrothorax—Ascites—Diarrhœa—Phthisis—Paracentesis
twice performed—Partial Recovery.*

M. S——, a rather tall woman, with light complexion and dark hair, aged 23, was admitted under my care, Oct. 25, 1843. She was a native of Essex, but had resided for some years in town. Her general health had been good; but she had been liable from childhood to cough, with oppression at the chest, which was increased by cold. She was very feeble about the age of thirteen, from growing very rapidly. She was married, and the mother of four children: the last was

born in the preceding March: the child died when a few days old. She had not been regular for the last four months, and thought it not improbable she might be in the family way. Since her last confinement her cough had been more troublesome, and the abdomen had never regained its former dimensions. About eleven weeks before admission she observed the abdomen to increase in size. The enlargement had been slowly progressive till lately, when she thought it had slightly diminished. Six days before entering the hospital she had been exposed to cold, and she had since been troubled with increase of her cough, dyspnœa, and incapability of assuming the recumbent posture. She had suffered no pain, nor had she been affected with paroxysms of orthopnœa or dreams during sleep; and her nights, excepting on account of her cough, would even then have been tolerably good, though passed in the semi-erect position. Her mother died in child-bed. Her father was alive, and, together with several brothers and sisters, was healthy. She had never suffered from hæmoptysis, ague, or jaundice: the veins of the abdomen had never been enlarged: the urine had lately been scanty and high-coloured. Upon admission she suffered from great dyspnœa, amounting almost to orthopnœa; her expression was anxious; her face pale and thin; the eyes brilliant, and the sclerotic dead white; her tongue clean, moist, red, and rough. She was considerably emaciated, and diarrhœa was troublesome; the cough was frequent; the expectoration mucous; the urine scanty, high-coloured, containing a deposit of the lithates, and not coagulable by heat. The abdomen, large, loose, and wrinkled from preceding pregnancies, evidently contained fluid indicated by fluctuation. No tumor, nor any enlargement of the liver or spleen could be discovered therein, and no œdema of the legs existed. The pulse were 140 in the minute, feeble, but regular. When attempting a partially-recumbent posture, for the purpose of having the chest examined, she frequently got up quickly gasping for breath. The following facts were, on this account, all that could be ascertained. The entire chest moved imperfectly upon inspiration. Marked dulness existed anteriorly upon the right side as high as the mamma, and poste-

riorly upon the left side up to the angle of the scapula. Absence or distance of the respiration, and decrease of the normal resonance of the voice, were obvious in the latter situation. Below the clavicles, but especially below the right, the respiration was hoarse, and mixed with mucous rattles. The impulse of the heart was felt nearer to the sternum than is usual; but the rhythm of the organ was normal, and the sounds were scarcely otherwise. As the diarrhœa required immediate attention in her weakened state she was ordered,

Pulv. Kino C. gr. x. omni nocte sumend; et Pulv. Cretæ C. c
Opio gr. x. ex. Mist. Mucilag. ter die; with Arrow-root
and Beef-tea for diet.

She continued without much alteration till the 28th; when the diarrhœa having been checked, though the tongue was still red and scabrous, the urine in very small quantity, the dyspnœa increasing, and decubitus equally or more difficult, she was ordered,

Potassii Iodidi gr. ij. Liq. Potass. m xv. Inf. Gentian. C. ʒiſs.
ter die.—Rept. Pulv.

Oct. 29. The dyspnœa and orthopnœa having increased rather than diminished, and dulness on percussion, together with absence of the respiration and the voice, nearly perfect immobility and slight enlargement of the left side, and partial displacement of the heart having been distinctly ascertained to exist, Mr. Cock, at my request, introduced, first the explorator, and then a small trochar, between the eighth and ninth ribs posteriorly, and drew off seven ounces of clear, yellowish serum. The patient felt almost immediately relieved. On the next night she was able to lie much lower in bed. The left side was found less extensively dull on percussion, and the heart less displaced towards the right side. Pleuritic rubbing was now distinctly heard below the left clavicle; the cough was still troublesome; the expectoration scanty and mucous; but the urine was considerably increased in quantity. Pulse still 140.

Capt. Linctum Opiatum pro re nata urgente tussi.—Rep. alia
medicamenta.—Milk diet.

Nov. 2. The dyspnœa having increased considerably, Mr. Cock again introduced the trochar, and drew off fifteen ounces of slightly sanguineous serum, the quantity withdrawn being increased, without the admission of air, by directing the patient to strain, and by pressure upon the ribs and abdomen. The bowels being now restored to a natural condition, she was ordered,

Pil. Scillæ c Hydrarg. i. Morphiæ Hydrochlorat. gr. ½. omni nocte.—Rept. Mist.—Wine three ounces a day.—Diet as before.

3. A cloud of flocculent sanguineous matter floated in the otherwise clear serum withdrawn from the chest: she breathed with much greater freedom, and lay down much lower in the bed: the dulness on the posterior part of the left side had considerably diminished since the operation.

13. She had gradually improved in every respect: the cough was much less frequent: she was now able to lie down much lower in bed, and was but little troubled with dyspnœa; the abdomen had decreased considerably in size, and fluctuation was less distinct. She passed much more urine; her appetite was good, and her tongue clean and natural; no obvious effects of the mercury were observed on the gums or tongue; but the pulse continued 140 in the minute, and feeble. The pleuritic rubbing had disappeared; and the other physical signs had decreased in extent and in degree.

24. She felt so much better, that she was anxious to return to her family. The whole chest was now raised imperfectly, but equally, upon inspiration. Anteriorly, the right side was dull below the mamma (probably from enlarged liver), and the left below the clavicle. The respiration was hoarse and rough below the left clavicle, and bronchial below the right: inferiorly, it was nearly absent on both sides. The resonance of the voice was increased below the right, natural below the left clavicle, and absent inferiorly. Posteriorly, the right side, with the exception of some increased resonance of voice over the scapula, was tolerably natural; and the left was now resonant on percussion as high as the interspace of the seventh and eighth ribs; but the respiration was generally imperfect. She was able to lie down in bed, and to

turn upon either side. She had little or no cough; the ascites had disappeared; her appetite was good; she had improved in strength, and had got stouter; her pulse was still 128. She left this day, very grateful for the relief afforded.

The relief was indeed great, and much, very much, beyond my anticipation; as I believed, and still believe, that she had phthisis, and that the fluid effusion arose from obstruction in the lung. I have seen her once since she left the hospital: it was about a fortnight afterwards. She then remained quite as well as when she returned home. I do not of course consider hers a case of recovery, as I believe her disease will return; but it was a very remarkable instance of very great improvement under exceedingly unfavourable circumstances, and of that improvement being much facilitated by the operation of paracentesis.

CASE 6.

Hydrothorax—Phthisis—Paracentesis—Death in three weeks.

Abstract of Report by Mr. ALFRED ROBERTS.

P. S——, aged 40, a tall and naturally plethoric Irish labourer, was admitted under the care of Dr. Babington, March 23, 1842. He had been troubled with cough for eighteen months; and, four months ago, he was attacked with pain of the left side, for which he was bled, and a blister applied, with complete relief. The cough had continued: it was accompanied with great expectoration, and prevented sleep. He was liable to flushes of heat and nocturnal perspiration. The pulse was sharp, but compressible: the posterior part of the left side was dull on percussion as high as the scapula, and afforded no respiratory murmur. Above this the respiration was bronchial: the sides were equal in size, and nothing is stated of displacement of the heart. Upon the explorator being introduced, a little clear serum escaped, which partially coagulated upon cooling. A trochar was afterwards used; but only an ounce and a-half of fluid was withdrawn. The next day he had a little increase of fever, which subsided in a few days; but he gradually sank, as from phthisis, and expired April 14th.

CASE 7.

*Pleuritic Effusion—Phthisis—Paracentesis twice performed—
Great Relief—Death after eleven weeks.*

Abstract of Report by Mr. POLAND.

W. B——, aged 38, admitted under the care of Dr. Babington May 25, 1842. He had been a valet in India, where he resided four years; had a compound fracture of the leg, which confined him to the hospital for four months, during which he had delirium tremens, having been previously accustomed to drink freely of spirits. Since his return, two years ago, he had been subject to much misery and want; and, after the healing of an ulcer of the leg six months ago was affected with cough, dyspnœa, and general pains of the chest. On admission, considerable dulness existed at the lower part of the left side posteriorly. There were indications of tubercular ulceration in the apex of the right lung.

28th. His distress of breathing being great, after minute examination of the chest, Dr. Babington requested Mr. Cock to perform paracentesis. About half a pint of reddish serum was withdrawn, which deposited a muddy sediment on cooling. The patient expressed himself considerably relieved. The dyspnœa having much increased, paracentesis was again performed, and about the same quantity of similar fluid was withdrawn on June 4th.

On the 12th he had so much improved as to be able to get out into the air: very little dulness is stated to have been observed; and the respiration was more distinct on the left side. He continued in a variable condition till July 16th; after which the symptoms of phthisis gradually increased, and he died August 25, 1842.

On inspection, after death, a cavity in the pleura was found completely defined by old adhesions of the membrane, and extensive tubercular disease in both lungs, including a considerable vomica in the apex of each.

CASE 8.

Empyema—Hydatid Cysts—Paracentesis—Recovery.

From an Abstract of Case furnished by Dr. BABINGTON.

H. S——, aged 19, admitted Dec. 2, 1840. Employed at a wine-vaults, he had been a good deal exposed to cold, and two years ago had an attack of pleurisy on the right side, and had been subject to cough and expectoration ever since. Last winter he was under the care of Dr. Bright for pain in the right shoulder, the pit of the stomach, and loins. Three months since his cough increased, with expectoration of yellow matter tinged with blood, which continued up to the period of his admission. He was emaciated, and had nocturnal perspiration—dyspnœa—and œdema of the feet. Eight months since he first observed a distinct tumor rather to the *left* of the scrobiculus cordis. The entire right side was dull on percussion: it measured an inch more than the left side, which was resonant on percussion, and over the whole of which puerile respiration could be distinctly heard. He could only lie upon the right side. It was thought he might be probably suffering from malignant disease of the lung; but during the night of Dec. 15th he was suddenly seized with violent coughing, which continued for half an hour, and nearly caused suffocation. His expectoration was then bloody, and contained some tough membranous substances resembling ruptured hydatid cysts. Dr. Babington, believing that the pleura contained fluid, requested Mr. Cock to introduce the explorer, and if his opinion proved correct, that he should afterwards use the trochar. Between one and two pints of purulent fluid were thus drawn off. He was afterwards, however, attacked with a violent fit of coughing, similar to that occurring on Dec. 15th, by which his life was thought to be again endangered. From this time he daily expectorated, for some weeks, nearly a pint of matter, occasionally containing what appeared to be shreds of hydatids. After about two months he began to cough less, and to gain flesh. He shortly afterwards left the hospital in tolerable health; and was seen, more than a year from that time, quite well. The tumor in the left hypochondrium however still existed.

CASE 9.

Chronic Pleuritic Effusion—Phthisis—Paracentesis—Death.

Abstract of Report by Mr. MILLER.

W. W——, aged 42, admitted Jan. 24, 1844. He had been subject to cough for several years; and, three weeks before his admission, had been attacked with pain of the chest, dyspnœa, and increased cough; for which a blister had been applied and medicines administered with relief. When he entered the hospital the countenance was pallid, sunken, and distressed—he had a troublesome cough, with frothy mucous expectoration, and great dyspnœa. The right side of the chest was nearly perfectly dull before and behind, presented greater fulness, and measured one inch and a half more than the left. The breathing was absent or distant on the right side inferiorly, and tubular superiorly. The voice, absent on the right side inferiorly, was louder than natural over both apices, and some mucous rattles existed on the left side. The dyspnœa having considerably increased, the trochar, after the explorator, was introduced on the 26th: thirty-six ounces of fluid were withdrawn, and he afterwards felt much relieved.

Feb. 3. The operation was again performed; but very little fluid was drawn off, as there was evidently a tendency for the air to enter the pleura. Without much alteration, excepting watchfulness, slight delirium, and gradually-increasing weakness, he sank on the 9th.

On inspection, the right pleura was filled with citron-coloured fluid, with some thick puriform sediment. The lung was greatly compressed, and contained many scattered tubercles, and portions of old, grey, hepatized structure. The left lung contained a vomica in the apex, and many scattered tubercles in almost every other part.

CASE 10.

Pleuritic Effusion—Extensive Phthisical Disease of opposite side—Paracentesis—Great temporary Relief—Death.

Abstract from Notes by Mr. PADLEY.

J. D——, aged 25, admitted Dec. 9, 1842, under the care of Dr. Bright. He was a blacksmith, of dissolute habits, and had some months before been in the hospital for pleurisy of

the right side and disease of the right lung. Five or six days previously to admission he had been exposed to cold while much heated by his work, and was suddenly seized with pain of the left breast, accompanied with acute febrile symptoms. This pain he still complained of, together with great dyspnoea and severe cough, accompanied with a frothy mucous, interspersed with purulent, expectoration. The respirations were forty-six in the minute; the pulse 126, small and jerking; the skin hot; the tongue furred, with red tip and edges. He lay down with difficulty in any position, but with least discomfort on the right side. The lower part of the left side, both anteriorly and posteriorly, was dull on percussion, and afforded but very indistinct and distant respiration. Tubular breathing and bronchophony existed over the upper, and ægophony over the middle portion of the side. The left side was larger than the right, which was considerably contracted and deformed from previous disease, was almost motionless during inspiration, and afforded scarcely any natural respiratory murmur. For the first three or four days he was blistered, and put under the influence of mercury, and took saline together with diuretic medicines; but he soon became so low and depressed, that the administration of wine and other stimulants became necessary. On the 15th the pain had ceased; but the left side had become larger, his debility and dyspnoea had increased, the countenance was anxious, and the face flushed and of a purple hue. Paracentesis thoracis was therefore ordered, and was performed by Mr. Cock the same evening. Ten ounces of clear serum, which partially coagulated upon cooling, were withdrawn, with almost immediate relief. After passing a comfortable night, his condition was, the next morning, much improved in every respect. He could lie down with greater ease; his countenance was less anxious; his respirations were reduced from 46 to 26; and his pulse, decreased in number from 120 to 96, were stronger and moderately full. For two days he remained comparatively comfortable; after which his dyspnoea and anxiety gradually again increased. On the 19th he was as much oppressed and more debilitated than before the operation; his respirations had risen to 60, and his pulse to 132;

his face was bedewed with perspiration; and he appeared to be speedily sinking. Paracentesis was again performed, and eighteen ounces of clear serum withdrawn; but with only slight relief to his severe distress, which terminated in death early the next morning. No inspection of the body was permitted.

CASE 11.

Chronic Pleuritic Effusion—Paracentesis twice performed—Relief—Result uncertain—Treatment still in progress.

From Notes taken by Mr. WRIGHT.

M. B——, aged 25, admitted under the care of Dr. Babington, Feb. 28, 1844. He was a bricklayer's labourer, and though of rather intemperate habits, enjoyed good health till three months ago, when he got wet through, and was afterwards attacked with pains of the limbs and chest, accompanied with cough and frothy expectoration. A month afterwards he had a severe pain of the left side, which lasted but a few hours; but was followed, after four weeks, by dyspnœa, which prevented his assuming the recumbent position, and was much aggravated by turning to the right side. On admission his aspect was distressed, and even anxious; his face rather flushed; and his skin hot and dry. The pulse were weak and frequent; the tongue clean and moist; and the urine rather high coloured. His appetite was pretty good, and he had no thirst. The left side of the chest was in appearance larger, and measured one inch more, than the right. The whole of the left side, excepting a small space below the clavicle, was dull on percussion, both before and behind. The respiratory murmur was inaudible throughout its entire extent, and vibration was altogether absent inferiorly. In the upper part the voice was more resonant than natural, and a little faint ægophony could be heard towards the centre. The heart could not be felt below the left nipple, but could be distinctly heard and felt on the right of the sternum. Nothing very remarkable was discovered on the right side. He was at first ordered blisters and saline medicines, and subsequently calomel, for the purpose of affecting his system.

But as, on March 11th, he continued much distressed, paracentesis was ordered, and ten ounces of clear serum with-

drawn, which formed a slight tremulous jelly upon cooling. He was slightly relieved. On the 13th the operation was repeated; and by the aid of the inclination of the body, and of pressure upon the parietes, more than forty ounces of the same clear, partially-coagulating fluid were drawn off, without a single bubble of air entering the pleura. He was much relieved; and though he subsequently had a little cough, and complained of some soreness of the chest together with his cough during the night, he was very comfortable the next day, and is now going on in every respect favourably.

TABLE OF TWENTY CASES IN WHICH PARACENTESIS THORACIS WAS

No.	Initials.	Age.	Disease.	Physician.	Operator.	Immediate Effects.
1.	J. P.	22	Doubtful	Dr. Addison	Mr. Cock	Great Relief
2.	W. C.	27	Pleuritic Effusion	Dr. Hughes	Mr. Cock	Great Relief
3.	E. M.	58	Empyema	Dr. Hughes	Mr. Morgan	None
4.	M. B.	9	Pleuritic Effusion	Dr. Hughes	Mr. Cock	None
5.	M. S.	23	Hydro-thorax	Dr. Hughes	Mr. Cock	Great Relief
6.	P. S.	40	Hydro-thorax	Dr. Babington	Mr. Cock	None
7.	W. B.	38	Empyema	Dr. Babington	Mr. Cock	Great Relief
8.	W. W.	42	Pleuritic Effusion	Dr. Babington	Mr. Cock	Great Relief
9.	H. S.	19	Empyema and Hydatid Cyst	Dr. Babington	Mr. Cock	Approaching Suffocation
10.	J. B.	25	Pneumo-thorax with Effusion	Dr. Addison	Mr. Callaway	Slight Relief
11.	J. B.	45	Pleuritic Effusion	Dr. Bevan	Mr. Bishop	Great Relief
12.	A Lad	19	Empyema	Dr. Babington	Mr. Kiernan	Relief
13.	A Boy	9	Empyema	Dr. Babington	Mr. Kiernan	Relief
14.	A Boy	8	Empyema	Dr. Babington	Dr. Babington	Relief
15.	Mr. A.	48	Hydro-thorax	Dr. Babington	Mr. —	Great Relief
16.	Mr. —	45	Pneumo-thorax with Effusion	Dr. Babington	—	Great Relief
17.	Mrs. —	30	Pneumo-thorax with Effusion	Dr. Babington	—	Great Relief
18.	Mrs. —	50	Pleuritic Effusion ? Hydro-thorax ?	Dr. Babington	Mr. Marsden	Slight Relief
19.	J. D.	25	Pleuritic Effusion	Dr. Bright	Mr. Cock	Great Relief
20.	M. B.	25	Pleuritic Effusion	Dr. Babington	Mr. Cock	Relief

PERFORMED, AND OF WHICH SOME RECORDS HAVE BEEN PRESERVED.

Ultimate Results.	Accompanying Diseases.	Additional Remarks.
Partial Recovery	Enlarged Liver and Ascites	Still in the hospital. Paracentesis thoracis performed four times, and always with great relief. Paracentesis abdominis four times also.
Recovery	Secondary Syphilis	Now again in the hospital for secondary eruptions. Paracentesis twice performed.
Death	Fractured Ribs and Pneumonic Abscess	Empyema defined by adhesions. No fluid evacuated.
Recovery	None apparent	A very small quantity of fluid evacuated.
Partial Recovery	Ascites, Diarrhoea, Phthisis?	Paracentesis twice performed, with great relief. Recovered so far as to be able to return to her family.
Death	Phthisis	No examination; but the existence of phthisis not doubted. Operation not proposed for cure.
Death	Phthisis	Operation twice performed, with benefit. Advanced phthisis. No ultimate good anticipated.
Death	Phthisis	Operation twice performed. On the former occasion with great benefit. No ultimate good anticipated.
Recovery	Tumor of the Abdomen	Disease probably dependent upon hydatids.
Death	Pneumonia and Pericarditis	Already sinking when the operation was performed. He survived about thirty-six hours.
Recovery	None mentioned	Four pints of fluid withdrawn, without the admission of air, by the aid of an exhausted cupping-glass. A patient at the Islington Dispensary, discharged cured in three weeks.
Recovery	None mentioned	Trochar left in with a plug, and about a tea-cup full of pus drawn off every day for a fortnight, when the trochar was removed, and the patient got well.
Recovery	None mentioned	The same plan here adopted as in the former case. The process was longer, but the cure perfect.
Recovery	None mentioned	The same plan was here adopted as in the two former cases.
Partial Recovery	Old Pneumonia	Died three months afterwards of general dropsy.
Death	Phthisis	Died about two months after from tubercular disease of the lung.
Death	Phthisis	Died between two and three months after from tubercular disease of the lung.
Death	Hydro-thorax of the other side	Died rather suddenly six days after the operation, previously to the proposed second operation being performed.
Death	Phthisis	Paracentesis twice performed. Relief after the former operation very remarkable; when repeated in four days the effect not so great.
—	—	Treatment in progress.

PLATE.

**Representation of the instruments used in the Cases of Paracentesis
Thoracis.**

Plate 1.



Fig 1.

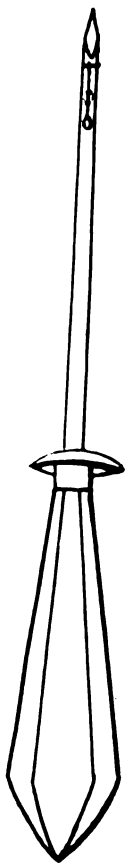


Fig 2.

ON
POLYPUS UTERI,

AND ITS CO-EXISTENCE WITH PREGNANCY.

BY H. OLDHAM, M.D.

UNDER the generic term of "Polypus" is included a class of bleeding growths, springing from the several parts of the uterus—its sides, fundus, cervix, or mouth; differing in form, size, consistence, and structure; either distending the cavity and being shut up there, or escaping by the mouth and bulging into the vagina, or passing beyond the external parts and lying forth between the thighs.

In the present communication I shall describe the morbid anatomy of these growths, and the source of the hæmorrhage in them, incidentally noticing any displacement of the uterus consequent on their development, or any practical point founded upon it; and then illustrate one form in which polypus and pregnancy co-exist.

One common form of polypus is a fibrous tumor pediculated. There is no growth to which the uterus is so liable as the common hard or fibrous tubercle. It assumes all shapes and sizes, and in its growth distorts the cavity of the uterus in every variety of manner. When, however, it grows inwards, it comes within the directing force, so to speak, of the womb; and it has a tendency to be propelled downwards, and to acquire a pedicle. When this is the case, it ceases to be an inert body, hurtful only by its mechanical action, and assumes the more baneful and important character of a bleeding tumor. Such polypi may originate in any portion of the uterus; but they usually spring from some part of the body, its sides, or fundus. Sometimes two or more are seen projecting inwards; greatly increasing the bulk of the womb, enlarging the surface of the cavity, and mutually obstructing the process of descent. In some instances of this

kind, one polypus has made its way into the vagina, and been removed, when it has been succeeded by another, which has been thought to be a repullation of the former; whereas, in fact, it has been a new and second growth. When first these polypi encroach on the cavity, their base is usually hard and extended, and they are frequently covered by a layer of uterine tissue. Sometimes, however, they are more superficial, being immediately submucous, when they more readily obtain a stalk, which is slender and moveable, and they appear as pendulous bodies. There is much variety in the amount of uterine tissue which attaches to, or encircles, this species of fibrous polypi. In some instances, a thickish layer will enclose, as a shell, the well-defined laminated firm tissue of the included growth. Generally, however, it is very thin around the free expanded surface, and collects in the stalk. In all these, the lining membrane of the uterus becomes the external investment, usually appearing clear, thin, and smooth; sometimes, however, it is thick, and exhibits that woolly flocculent aspect which it is prone to assume under various disorders, both of the uterus and ovaries.

The vascularity of these tumors resides essentially in the investing or connecting portion of the proper tissue of the womb; and this undergoes changes proportioned to the bulk of the fibrous tumor. The arteries are enlarged, but very insignificantly as compared with the veins. The latter increase much in the same way as in pregnancy, gathering around the enclosed tubercle in a planiform manner, or densely collecting in the stalk. The amount of blood-vessels in the fibrous growth itself varies with the compactness and density of its structure; qualities which are produced in part by its infiltration with calcareous grains. When the growth is of long standing, and very hard, the supply of blood-vessels, as shewn by injection, is very scanty; but in more recently-developed tumors, large and numerous arteries are seen proceeding from the uterine tissue into their substance, running in their intersecting lines, and dividing freely in the fibrous tissue. What has struck me however as peculiar is, that the veins, although closely collected around the growth, do not appear to enter it. I injected a specimen a few months since, when the red fluid, which had been thrown into

the arteries, had penetrated the tumor freely, and the trunks subdivided into very minute capillaries running parallel with the clear unstriped elementary fibre of the growth; the veins which had been filled with a yellow fluid, were not made apparent in the fibrous tumor, although they were very well injected around it, and throughout the uterus, and very beautifully demonstrated the capillary rete on the external serous surface of this organ. A polypus, then, of this kind is composed of a fibrous growth, with more or less of uterine structure, covered by the mucous membrane of the womb. The anatomical elements of the fibrous growth are a clear unstriped fibre, closely packed, interspersed in some instances with crystalline calcareous grains (the existence of which has long been known as a chemical constituent of them), and minutely divided arteries. On this point I may incidentally notice, that their minute structure adds one more to several other considerations which might be cited, excluding the fibrous tumors of the uterus from the class of malignant diseases.

On this form of polypus I would remark:—1. That the process of descent or pediculation is frequently very tedious, lasting in some instances for years; which mainly arises from their unyielding texture: that the uterus augments with the size of the tumor; and the cervix and os yield and expand before it: and that the patient is liable to be destroyed by hæmorrhage before this is accomplished. 2. That in some cases the discharge is not blood, but a clear serous fluid, effectually draining the system and destroying as a hæmorrhage. Sometimes, a constant copious drain of watery fluid is associated with an occasional hæmorrhage, which the following case illustrates:—

SUSANNAH CROUCH, aged 43, a married woman, of leucoplegmatic temperament, enjoyed good health during the first seven years of marriage, but was not pregnant. She then, fourteen years since, began to suffer from dysmenorrhœa, and a lump appeared in the right iliac region. The catamenia recurred every three weeks, the tumor slowly increased, and she had medical advice, but without material relief. Six years ago, after a suspension of the menses for four months,

she was frightened, and expelled, after much pain, a substance which, she says, was like blood enclosed in a skin. Three years since, she supposed herself pregnant, the catamenia not having appeared for six months, when pain, hæmorrhage, and the voiding a substance, was followed by a diminution in the size of the abdomen. Since this time, she has had a clear watery discharge constantly oozing from the vagina, and sufficiently profuse to saturate two sheets, well-folded, in the course of twenty-four hours. She was admitted into Guy's Hospital under Dr. Ashwell's care; and when examined, the vagina was found stretched, and completely filled, by a large bulging growth, smooth, and insensible, and the os uteri was beyond the reach of the finger. A large globular tumor could be felt occupying the central inferior part of the abdomen, coming out from the pelvis, and reaching as high as the umbilicus. It was perfectly circumscribed, and did not stretch into the iliac regions. When firmly pressed, it imparted an obscure sense of yielding; and was evidently the enlarged uterus: the examination gave no pain. After an attack of hæmorrhage, which had much reduced her, Dr. Ashwell determined to tie the growth; but he desisted from the attempt. Perfect rest, a good diet, &c. improved her powers; but the growth and the uterus remained as before. In the beginning of November 1843 the uterine swelling became very painful; she was much enfeebled; and had flushes of heat and hectic. A coloured discharge came on, but not in large quantity. These symptoms gradually subsided, and the coloured discharge was followed by a quantity of clear pus, which seemed to give her much relief. When partially recovered from this depressing attack, she suddenly determined to leave the hospital. In company with Mr. Hewitt, who, as Clinical Clerk, had carefully watched the case, I visited her at her own house. We found her much improved in health; and, on examination, the polypoid growth was diminished in size, and of a softer consistence. I could trace it beyond the os; and it seemed to me to be attached high up in the uterus by a broad base. The serous draining continued as profuse as ever; and I advised her to permit me to apply a ligature round it; but she declined, for the present, to submit to the operation.

3. That the action of the uterus, in its attempt to effect the descent of these growths, sometimes displaces and drags with it the wall of the uterus to which it is attached, inverting it. This circumstance has been attributed to the weight of the polypus; but in three preparations which I have seen, shewing this occurrence, the polypus has been by no means large, and seemed insufficient to produce such a result. It is rather to be attributed to the constant action of the womb; and I know of no instance where the residing intrinsic force is so well exemplified. A very interesting preparation of this kind was sent me by Mr. Duke of Kennington (*Vide Plate L*). The poor woman who was the subject of it was between fifty and sixty years old, and was a virgin. She had been suffering for some time from occasional hæmorrhage, and afterwards from an offensive discharge. Her countenance was anxious; the pain in the uterus very severe; and she was thought to be the subject of malignant disease. She refused to permit a local examination; and she died, worn out with the discharge and bleedings. In this instance, the right horn of the uterus is completely inverted. The polypus, which is the size of a small orange, has no proper pedicle; but it merges insensibly into the inverted portion of the womb. Its structure is firm, compact, fibrous, and very resistant when cut through. Its lower free surface, which has passed beyond the os, having freely dilated it, is sloughy and ulcerating; and on the right side is seen a largish patch of a fungoid growth, which is imitated by one of about the same size and character on the contiguous surface of the expanded womb. The orifice of the right Fallopian tube is patent, and stretched in front of the inverted portion of the uterus; and the tube and ovarian ligament are shortened, and come out of the cavity formed by the inversion. The left horn of the womb has not shared in the inversion, but retains its proper situation.

This preparation strikingly illustrates some important facts connected with these polypi. An obvious practical point refers to the extirpation of such growths by ligature. There is every probability that in the attempt to noose the polypus in question the ligature would have included the inverted portion of the uterus—a circumstance full of danger.

The history of such cases, by Denman, William Hunter, and others, is that of a fatal operation, with symptoms of inflammation of the womb and peritonæum, with phlebitis and the absorption and circulation of pus. Indeed, when the presence of a developing polyp has been suspected from recurring and intractable hæmorrhages, followed by much white or serous discharge; when what was at first called menorrhagia has not yielded to the remedies for this functional disorder; when the local sufferings and direct indications of a bulky hard womb are present; when the os gradually opens, and by very slow degrees, and with much pain, the growth comes out, not suddenly under vomiting, exercise, or even ergot, but very gradually; and when the tumor, if touched, feels hard and unyielding; it is a fair presumption that the short stalk of it may be a portion of inverted womb; and the ligature ought to be applied as remote from the commencement of the pedicle as circumstances will permit.* The occurrence of pain, too, when the ligature is tightened, attended perhaps by vomiting, ought to be met, not by opiates to lull the pain, and so destroy this valuable indication of impending danger, but by loosening the ligature, and relieving the included parts.

This preparation has another feature worthy of notice; viz. the occurrence of sloughing, ulceration, and the development of malignant disease on the free surface of the polyp. Polypi, like other pendent tumors of the uterus and vagina, are apt to ulcerate and break down. This process usually begins at the lower surface, just as is so often seen in a procident womb, at a point where resides the greatest stress of pressure; and sometimes it extends upwards, destroying the growth, which is voided piecemeal. Sometimes the pedicle itself breaks down, and the body is said to be spontaneously separated. Dupuytren maintained that polypi, which had lain long in the vagina, had a tendency to undergo a cancerous degeneration; in some instances, by a transformation of the growth

* Valuable aid in detecting the co-existence of partial inversion of the womb with polypus is afforded by the uterine sound, as recommended by Dr. Simpson. We are able by its use to discover that the cavity is shortened around the attachment of the tumor, although it may retain its full length in the uninverted part, as is seen in the preparation I have described.

into a cerebriform matter, and in others by the generation, as in this case, of fungoid patches, with softening of their structure. These changes concur with great aggravation of symptoms and rapid declension of strength.

I cannot avoid, in this place, giving the particulars of a case which occurred to Dr. Rigby, of St. Bartholomew's Hospital, in which apparently the uterus became suddenly inverted after he had tied a protruding polyp, and was removed by him with the polypus by a second ligature. Dr. Rigby kindly favoured me with the following account of it.

"*Jan. 1844.* Mary Hill, aged 50, was admitted into St. Bartholomew's Hospital two and a-half years ago, on account of a polypoid growth of about the size of a small orange, which projected into the vagina: the pedicle was thick, and appeared to spring from the upper part of the uterus: it was firm and fleshy to the feel, and did not present the ordinary character of a malignant growth. A ligature was passed rather low down upon the pedicle, and tightened without producing pain.

"During the night, bearing-down pains came on, like those of labour, which expelled a large, irregularly-shaped, fleshy mass, at the end of which was the lobular growth which had been tied. The mass was as large as a calf's heart, and appeared to be of the same structure as the polypoid end, on which the ligature had been placed: it did not appear to be sensible; and the patient, with the exception of a dragging pain in the loins, like that of prolapsus uteri, felt rather relieved than otherwise by its expulsion. As the mass filled up the vagina so completely as to preclude examination by the finger to any distance, I could only ascertain that the extruded mass was attached by a thick, firm, fleshy pedicle, which went up far beyond my reach. Another ligature was applied low down the vagina, which also produced no pain, and was tightened every twelve hours. On the second or third day, profuse hæmorrhage arose from the rupture of a considerable-sized venous trunk, which had become very turgid: pressure and caustic were applied without success; and it was ultimately taken up and tied with a portion of the surrounding structure. One or two other vessels burst shortly afterwards; and these repeated attacks of hæmorrhage much reduced her. It being summer-time, the mass began

to putrefy rapidly; and in spite of chloride of lime, &c. the putrid portions had to be removed daily by the knife, to diminish the effluvia. The ligature and remaining portion came away at about the fourteenth day. She regained her strength, and became an out-patient.

On examining her, about a month afterwards, Dr. Rigby found the vagina healthy, with a cicatrix-like spot, where the os uteri ought to have been; but evidently with no uterus above it: the canal was somewhat contracted at its upper extremity, forming a cul-de-sac. She was also carefully examined by Dr. Rigby's assistant, Mr. Protheroe Smith.

There is another variety of polypus, in the construction of which fibrous tissue largely enters. It grows from any part of the womb, and is, from the first, of a softer and more impressible character than that just described. It sometimes acquires a very large size, and when associated with pregnancy may weigh some pounds. The uterus does not readily yield to this species of polypus; and at an early period of its growth, it is seen flat, and accommodated to the small cavity of the womb: its stalk is frequently slender; and it is only when it has escaped beyond the os that it expands and bulges in the vagina. Sometimes, from the first, instead of being directed downwards towards the mouth of the womb, it grows upwards towards the fundus, its pedicle being marked out while it is still very small. One preparation illustrating this fact has been drawn. (See Plate II. fig. 2.). The little polyp is here folded upwards, its uterine end being narrowed into a stalk; and it derives additional interest from the location of the polypus in Mr. Crisp's case (an outline of which will be given in the sequel), where an immense polypus was found, after labour, in the cavity of the uterus, occupying a similar position. This form of polypus has been called spongy, cellular, or fibro-cellular. The latter term very correctly expresses its appearance when bisected, but, I believe, erroneously interprets the true structure of these growths. In some rare instances, cysts, containing a clear fluid, or grumous blood, have been noticed; but in general the void spaces or cells, as they are termed, are really truncated and divided veins; and the tumor may not unaptly be termed a venous tumor; the thin and delicate veins being

surrounded and supported by an unstriped fibre, closely resembling, if not identical with, the muscular tissue of the uterus. I have clearly made this out in dissecting some large growths of this kind, and by the microscopic examination of the fibrous structure. The veins not only collect around the growth, as in the other species; but, while they may be seen on the surface in large trunks, they penetrate the centre, and are distributed through it in large channels, freely communicating with each other, and forming a very extensive venous circulation.

A polypus, very differently constituted, has been well described by Dr. Lee; and our artist, Mr. Hurst, has delineated a specimen in Plate II. Fig. 1*. It is built up of a number of little round vesicles or cells, about the size of a Graafian follicle, filled with a pellucid fluid, the cell-capsule being thin and transparent; and the collection of them is supported by a fine fibrous tissue: it is about the size of a Brazil-nut, and grows from the body of the womb, dilating the cavity. The pedicle is short, but of lengthened attachment; and the polypus spreads out, somewhat like a small cotyledon on the pregnant uterus of a cow might do, from its stalk. The surface is smooth, and presents a rich embossed look, from the number of tense, shining, little elevations. It occurred to me that this somewhat curious fabric might arise from the uterine glands, which, it is well-known, expand into cup-like cysts under the stimulus of impregnation and ovarian excitement; and I examined the preparation from which the drawing is taken, in order to determine the point; but its long immersion in spirit obscured it too much for the purpose. Since this time I have seen another uterus with a similar though a smaller product. The subject of it was a poor woman, who died in the hospital from empyema and bronchitis: she was fifty years old; and there was no history of any uterine disorder. The extremity of the left Fallopian tube was closely adherent to the body of the womb. On opening the uterus, a small polyp was seen growing from the

* It was taken from the body of a woman named Elizabeth Goodman, aged 61, who died shortly after the operation for carotid aneurism. There were several bands of false membrane connecting the appendages of the uterus to its body.

anterior lip, which was made up of a number of cysts holding a transparent fluid, and covered with a distinct cuticular investment. Springing from the left side of the womb, and projecting into the cavity, about two lines above the cervix, was another small polypoid growth. This consisted of a mass of round pearly-looking cells, blended together by a fine fibrous tissue, and distended to the utmost, so as to feel hard, by a semi-opaque mucus. It struck me that what had occurred at the lip of the womb, in Naboth's glands, to form them into a polyp, had been transacted above in the uterine glands, transforming them into an analogous production: and what gave confirmation to this view of the composition of the latter was, the existence of a number of small vesicles on the surface of the lining membrane of the cavity, in the immediate vicinity of the polypus. They appeared isolated and distinct, and held the situation which the opening of the glands would do, and looked as though the opening had been obstructed, and a transparent mucus had collected behind, filling and elevating them on the mucous membrane of the womb.

The crypts of the cervix uteri furnish, in their enlargement, another form of polypus. They are described and figured* as cystiform bodies, hanging from the cervix; sometimes several in number, and vascular, filled with a curdly fluid. One polypus of this kind, which is a cyst, the size of a walnut, with a cortical layer of fibrous tissue, and an irregular lining within, is in the Museum; and some of the small polypi of the os and cervix, which are moveable and slippery, and embarrass any attempt to noose them, and yet give way when caught by the forceps to twist them off, appear to me to be of this class. Perhaps the best way to treat these cases is, to distend the vagina with a speculum, and with a pair of long scissors, curved and blunted at their extremity, to snip them off. It is an intermediate operation between torsion and cutting with a knife; and while it possesses in a minor degree the advantage of the former, in preventing hæmorrhage, it excels them both in the facility of its execution. In my own investigations of polypi, I have met with two specimens of a very different kind from those just described; although,

* Medico-Chirurgical Transactions, Vol. XIX.

like them, they arise from the cervix; and the crypts, with their tenacious mucus, reappear within them. I would designate it, the *channelled polypus of the cervix*, from the fact that its interior is made up of numerous large channels, with occasional communications between them, and opening, by large orifices, on the free surface of the growth. These polypi do not at all resemble those described by Dr. Lee: they do not appear as a number of pendent enlarged cysts, clustering together, but rather as a solid single polypus, with numerous orifices marked out on their exterior. The two specimens I have mentioned are delineated in Plate II. Figs. 3 and 4; one shewing the interior of the polyp, and the other the openings on the free surface leading into them. The second polyp (Fig. 4) I had the opportunity of examining before its excision, as it lay beyond the external genitals. The following are the short notes I took of the case:—Mrs. —, aged 33; looking blanched and thin; has been married a year and a-half. A few weeks after marriage, while engaged at some ordinary domestic work, she was suddenly attacked with hæmorrhage from the uterus, which came on in gush, and lasted several days. After this she miscarried, about the sixth week of pregnancy. Since this period she has had repeated attacks of hæmorrhage, and has miscarried a second time, at the same week of gestation. The hæmorrhages have blanched and reduced her.

A polypus, growing by a long slender stalk from within the os, projects beyond the vulva, about the size of a large spread-out fig. It was of a pale rose-colour, clear and shining; and on its surface were several valvular orifices, one of which was ragged, and gave vent to a quantity of sticky transparent mucus. It was insensible to the touch, and as soft and imcompressible as ordinary flesh. I much wished to see this bleed before its excision; but this privilege was denied me. On dissecting this, when cut off, I found that its pedicle on the divided surface had several small orifices, most of which were vascular trunks: and the outer surface of the stalk had some concentric rings, rather elevated above the surface, and was full of small openings, from some of which blood flowed when the tissue was pressed. The large valvular orifices were found to lead into the interior of the polyp,

dilating into channels which were lined by a thin rugous membrane inflected from that covering the polypus. Other channels led out, here and there, from a larger one; and so the growth was traversed throughout by these channels, which were all, more or less, full of mucus. The trunks became smaller as they approached the pedicle, but could be traced through it. In some portions, some cœcal tubes, dilated and bulbous, and quite full of mucus, were visible. The walls of the channels were vascular. The other specimen (Fig. 3), was more globular than the preceding one, although its construction was exactly similar. Its exterior is seen studded with openings; and some of them resemble the circumvallate papillæ at the base of an adult tongue.

The morbid anatomy of these growths, then, as just described, would lead to the inference that they were formed, not from an organized coagulum, or on the type of compound adventitious serous cysts, as some writers have supposed, but rather as direct productions of the different elementary tissues of the womb. I take this as a general view of them, without entering into any particular exceptions, which might be cited.

There has been some diversity of opinion concerning the source of hæmorrhage in polypi; whether it comes from the tumor itself or the uterus. We have the opinion of Dr. Churchill thus expressed: "It is extremely difficult to explain, on pathological principles, the occurrence of the alarming hæmorrhages which accompany polypus uteri: it is impossible to attribute their source to the vessels of the polypus, since the existence of such can seldom be ascertained." And again: "Perhaps another evidence of the slight vascularity of these pendent tumors is afforded by the rarity of morbid changes on their surface: they are seldom or never attacked by inflammation and ulceration, and never degenerate into malignant disease."

I should be more ready to yield to this supposed difficulty, were I at all convinced of the facts thus stated; but it has already been shewn that polypi are vascular; that they do ulcerate, and that they are liable to malignant degeneration, although, undoubtedly, the two last are of rare occurrence. There is however some difficulty in recognising the veins of

the womb when they have quitted their uterine bed, and been prolonged into any adventitious growths, or, as a familiar example, into the placenta; their very thin walls collapse, and their smaller divisions appear like a large cellular structure. Their obscurity in the placenta has long been known, and, unless they are well-injected, it would be very difficult to recognise as veins those large oblique lateral channels placed intermediately between the margin of the placenta and the uterine veins, and returning the blood from the placenta into the general circulation. This can be the only cause for their being overlooked in polypi by Dr. Churchill and others.

The hæmorrhages from polypi are sometimes insidious, recurring with the menstrual periods, during which a profuse discharge, with clots, comes on. At other times it is sudden and violent, blanching the face, and causing syncope and vomiting. In the first instance, the polyp is probably still within the womb, and the hæmorrhage resembles, and is constantly taken for, and treated as, a passive menorrhagia: in the latter the growth is usually in the vagina, and the hæmorrhage resembles the accidental bleedings of gestation, or those attending a placental presentation. I am disposed to think that the proximate cause of the shedding, in these instances, goes beyond a resemblance, and approaches nearer to identity. The peculiar circulation of the womb, which is eminently venous, and the disposition of the veins in planes, and not a gathering from capillary to small branches, and from them to larger, and their tendency to open by lateral apertures on the surface of the uterus during pregnancy, ought never to be forgotten in uterine pathology. It is, however, very embarrassing to make out the exact state of the veins when the womb is performing its other function of giving out the menstrual flux; just as the demonstration of the muscular fibre and the nervous ganglia in a uterus, where these elementary constituents are undeveloped by pregnancy, is one of acknowledged difficulty. Whatever difference may be said to exist between the menses and blood, as to the former not coagulating, being defective in fibrin, &c. (variations which its slow admixture with the salts in the secretion from the uterine and vaginal glands may probably cause,) still

its appearance under the microscope goes very far to prove it a hæmorrhage, as the blood-corpuscle is the main constituent of it. I have examined this fluid when taken carefully from two women who had procidentia uteri; and I have noticed this fact, which only corroborates what had previously been observed. The question is, What is the mechanism of this monthly hæmorrhage? how is it produced? Dr. Locock's words are, "It will be sufficient to state generally that we consider the menstrual discharge to be a peculiar periodical condition of the blood-vessels of the uterus." Now, I think we have much circumstantial proof that this peculiar periodical condition of the blood-vessels of the uterus is little else than an enlargement of its veins, and their spontaneous opening on the surface of the womb. If a healthy uterus be examined after death, its lining-membrane is clear, and perfectly smooth: you may squeeze the uterus, but the membrane remains as before: but if the womb has been enlarged, either from the congestion preceding or attending menstruation, or the development of a small tumor in it, the membrane, when thus pressed, shews a number of bloody points, which increase with the continuance of the pressure; and blood oozes out gradually from some of them. The easy conversion of the monthly discharge into an undeniable hæmorrhage, with clots, which is of frequent occurrence, favours this view; and the venous openings, when the womb is magnified by pregnancy, additionally confirms it. Dr. Burton,* long since, noticed the openings of the veins at the fundus of the unimpregnated uterus, and has given a very good representation of them. He says, "they are distended with blood in the time of the menses, when their orifices are also enlarged. Mauriceau opened a woman that was hanged whilst she had her menses, and observed that the vessels at the bottom of the womb were much larger than those at the neck, and that little lumps of blood came out of the orifices at the fundus uteri." Nor can I forbear to quote the following experiment of Dr. Wallace Johnson† and John Hunter. "Being desirous of ascertaining if there was a nearer passage from

* *New System of Midwifery*, by John Burton, M.D. London, 1751.

† *A New System of Midwifery*, by Robert Wallace Johnson, M.D. London. 1769.

the cavity of the womb to the ovaria, than through the Fallopian tubes, I applied," says Dr. J. "to that experienced and most excellent anatomist, John Hunter, to try the experiment I had thought of." This consisted in tying the tubes near their extremity, in a uterus where the arteries had previously been injected; and having fixed a pipe in the vagina, so as to correspond with the os tinæ, they injected some flake-white and water into the cavity of the uterus. When this was well filled, they found the injection ran out of the sections of the hypogastric and spermatic veins. By inspecting the inner surface of the uterus, they observed many small apertures, through which the injection had passed from the cavity into the veins. One ovarium was diseased: the other contained a calix. From this and other experiments, Dr. Johnson concludes, "that the menstrual flux must be made by these orifices." I have tried this experiment in a uterus which was not full or enlarged, and without any such appearance; and, from several injections of the unimpregnated womb, I know that the lining-membrane is covered with a uniform capillary net-work, some largish veins being seen running just beneath the surface, and in a straight line from the cervix towards the fundus. But I have not had the opportunity of trying the experiment when a woman has died menstruating; and the changes in the uterus are so rapid when it becomes distended with blood, that orifices may be patent in the latter case, which had been effectually closed before. Perhaps the appearance of a calix, in Dr. Johnson's case, might infer the very recent existence of pregnancy, although there is no other mention of it. From what has been said, I should regard the proximate cause of menstruation as a filtering of blood from veins which open: passive menorrhagia is due apparently to a loss of power in the muscular fibre, which guards the orifices of these veins: and the first bleedings in polypi are probably owing to a general enlargement of them, with that want of accordance between vein and enveloping fibre which a new interfering growth would be likely to produce.

The sudden bleedings in polypi may arise more capriciously, without regard to menstrual periods. The cause of the accidental and placental hæmorrhages is from the open-

ing of vessels by a partial detachment of the placenta, or a forcible laceration of them by the developing cervix; and I am inclined to think that the bleedings in polypi arise either from the tearing of the thin layer of mucous membrane which covers their free surface and the orifices of the subjacent veins, or from their opening under the accumulation of blood in them, much in the same way as the veins in the womb do under the congestion of menstruation. Two years ago, I tried to inject a polypus from some vessels near and about its pedicle; but I failed to do so. On examining it still more closely under water, I was struck with the cellular look of its free surface; and the appearance of thin delicate veins grew upon me as I examined it. I held a pipe in one that was more channelled than the rest, and I found that I rapidly filled a portion of the polyp. I did the same thing last summer in another polypus; but both these growths had been separated by ligature; and the investing membrane was too soft and shaggy to display the manner in which the veins terminated relatively to the surface. They only assured me of the fact, that, in some polypi, the veins approach the surface, not only as large, long trunks, but more like a cellular or cavernous structure. In the channelled polypi, the veins around the pedicle appeared to me open; and blood issued from them when this part was pressed. In Dr. Rigby's case, as already mentioned, a violent hæmorrhage occurred after the ligature had been applied, requiring the venous trunk to be tied to arrest it. In a case related by Cruveilhier, and quoted in Dr. Lee's valuable Paper, we have this remark, in describing the tumor. "Several great uterine sinuses opened on its surface at its apex, from which the blood flowed, which destroyed the patient." And in the account of another by Dr. Lee, when pressure was made on it, blood oozed out from numerous small orifices on the surface of the tumor.

From these considerations I conclude that the bleedings in polypi are from the tumors themselves, and principally from the veins on their surface or pedicle; that sometimes the veins are lacerated, and at others open, under the accumulation of blood in them; as they do during menstruation.

The existence of a polypus does not necessarily prevent

pregnancy; and they may be associated in two forms:—1. when the polypus grows from the os and cervix, and is, from the first, outside the womb, depending in the vagina; and 2. when the polypus has been developed during pregnancy, and has, from the first, been retained within the womb; and its existence not made known until labour has been begun or ended. It is beside my present purpose to consider at length the first form alluded to; especially as, in Number XIV. of the *Guy's Reports*, it has been treated of in a Paper, by my colleague Dr Lever, on Pelvic Tumors obstructing Parturition. If hæmorrhages have not occurred to demand the removal of such polypi during gestation, the treatment of them when labour comes on is easily determined, and rests on the degree of impediment which they offer to the birth of the child. If the polypus be small, and the pelvis and soft parts favourably formed, there is no need to meddle with it until the changes consequent on parturition have been completed; but if the size mechanically prevents the passage of the child, ligature and excision are the best means of getting rid of it. I would make this remark, however, that sometimes, in a very early stage of pregnancy—say a month or six weeks,—a polypus will suddenly and rapidly be developed from the os, and bleed profusely; and this bleeding, taking place so soon after the last menstrual period, obscures the early signs of pregnancy, which the hæmorrhage itself contributes to efface. A ligature applied to remove the growth will probably be attended with the unexpected appearance of an ovum. I removed a polypus of this kind from a very delicate young woman in May last, who had no suspicion of being pregnant. The polypus came away in two days after the ligature had been fixed, and on the third she aborted. I have known similar instances; and I think it a useful caution to be guarded on this point.

In treating of the second form, where polypus and pregnancy co-exist, I shall relate several illustrative cases, selected so as to afford a diversity of symptoms and treatment, with different results, from which we may readily deduce the practical conclusions which they indicate. Two cases of this very rare complication have occurred within a short time of

each other in the neighbourhood of London; one at Tottenham, in the practice of Mr. Moon; and the other at Walworth, in that of Mr. Crisp. Dr. F. Ramsbotham kindly gave me the tumor, with his own notes, of the first case; and I have had the opportunity of examining the other.

CASE.

Dr. Ramsbotham was called to a lady, about thirty years of age, by Mr. Moon of Tottenham. She had been delivered naturally about three weeks before; and during this time she had had slight and irregular discharges of blood. On the morning Dr. Ramsbotham saw her she had passed blood enough to cause fainting. She took small doses of ergot, without relief. "I found the uterus," says Dr. Ramsbotham, "as large as a six-months' pregnancy, and tender; and slight discharge was going on per vaginam: the uterus was large: the os soft, spread, and close: I could just get a finger in, and thought there was a secondary fœtus, or a large coagulum. I gave ergot in larger quantity, which produced much pain." On Tuesday morning, after much pain during the night, Mr. Moon felt the os opening, and something within the cavity; and at 2 P.M. he was hurriedly sent for, from the severity of pain and the nurse finding something protruding. He passed his hand into the uterus without much trouble, by the side of the tumor, and found it attached, by something like a funis, to the fundus. He embraced the stem firmly, and, under strong uterine contraction, his hand and the tumor were expelled together. This lady recovered without a bad symptom.

The tumor exceeded in size a large ostrich egg, and was one of those which are called fibro-cellular. Its tissue was composed throughout of a clear unstriped fibre, and very large veins: some large enough to admit the end of the little finger were found on the separated surface, and pervading the whole growth. It was too much decomposed at the surface to permit of its being injected; but the sponginess of the growth, and comparative looseness of the fibre, seemed to indicate its rapid development.

CASE*.

Mr. Crisp attended a lady, aged 36, with her sixth child, in August 1843. She had miscarried three times before her last, or fifth labour, which took place naturally nineteen months before the present, and she had aborted once in this interval. During the last month or six weeks of her present pregnancy she had been subject to frequent small discharges of blood from the uterus. The membranes ruptured when the os had been dilated only to the size of a half-crown piece, and the labour was speedily terminated; when the pains, which had subsided after the discharge of the liq. amnii, again came on. The placenta being retained, Mr. Crisp, after waiting three quarters of an hour, introduced his hand, and removed it. In withdrawing his hand, he thought he felt another child enclosed in its membranes, and endeavoured to peel away from the side of the uterus what appeared to be the placenta; but failing in this, he perforated it: being again foiled, he desisted from further interference. Dr. Chowne and Mr. Bristowe, being called to the case, discovered that there was a large polypoid growth within the womb, causing violent expulsive pains, and greatly exhausting the patient. The energetic action of the womb forced the polypus so low down in the vagina as to interfere with the passage of the catheter. The patient died collapsed, worn out with the constant uterine action, though unattended with hæmorrhage.

The tumor, which, with the uterus, weighed seven pounds, was attached by a broad pedicle, ten inches in circumference, to the right side of the uterus, above the cervix; while the great bulk of the growth was turned upwards towards the fundus, and had contracted some adhesions to the contiguous surface of the uterus. It was fourteen inches in length, and the circumference of the middle of it was fourteen inches and a half. The portion of the tumor, about the size of an orange, which had projected into the vagina, was dark-coloured and fœtid; and the uterus itself reached as high up as the umbilicus. The bladder was distended with urine, and the urethra elongated and pressed out of place by the tumor. The structure of this tumor was identical with that

* *Lancet*, Nov. 11, 1843.

in Dr. Ramsbotham's case; the prevailing tissue being a clear unstriped fibre, which, when examined with a portion of the muscular fibre of the uterus, differed only in the latter being more full of cells and blood-corpuscles, which rendered its definition as fibre less distinct than the former. Large veins were seen in the part which had been bisected.

M. Guyot relates a case where he saw a female, five hours after delivery, in whom a polypus, the size of a foetal head at term, was attached by a flat pedicle of two fingers' breadth to the interior and right side of the womb. It had presented before the head, but there was no loss of blood. On the following day, on account of pains in the groin and loins, he determined to remove it; which he accomplished, with perfect success, by ligature and excision.

The two following cases are thus briefly related by Dr. Churchill*:—A dispensary patient, after a natural labour, appeared to be going on well. In a short time, however, flooding came on, resisting the prompt application of all the usual means for arresting hæmorrhage; and in eight or ten hours she died. A large cellular polypus was found, on examination after death, depending from the fundus, which had prevented the proper contraction of the womb. In a second case, the flooding did not come on till ten days after labour. The uterus could be felt larger, than usual, above the pubes, until the contractions forced the polypus to the os uteri, where it could be distinctly felt. The hæmorrhage was arrested; and afterwards, when Dr. Churchill would have tied the polypus, it was beyond reach, though the end could be felt. No further bleeding occurred, and the patient did well.

These cases exemplify the difficulty in determining the existence of these growths, when they attend pregnancy; and also the varying symptoms and results which accompany different cases. A preliminary question suggests itself, whether these polypi originate with pregnancy, or whether, having existed before conception, they have developed only with advancing gestation. There can be no doubt that small polypi are very often in the cavity of the womb, without any

* *Outlines of the Diseases of Women*, p. 191.

symptoms indicating their presence. I have found this the case in the general run of inspections at the hospital. Nor when they are in this dwarfish state, unless from some peculiarity in their attachments, would they necessarily prevent impregnation; especially, if like nasal polypi, the cilia of the investing membrane increase in size and activity of movement. I think that the little polypus in Plate II. fig. 2. shews pretty accurately the position, outline, and probably, too, the size of that in Mr. Crisp's case before conception took place, if the conjecture of that gentleman, as derived from the history and symptoms of the patient, that it was there before the last pregnancy, be correct, which appears to me reasonable. The effect of the enlargement of the womb during gestation is commensurately to increase the polypus, which immediately participates in its venous circulation, and grows silently within the cavity of the womb, which accommodates it, without interfering in any way with the process of development, or shewing any sign or symptom of its being there. Neither do they derange the progress of the labour, which, in most cases, has been natural, and without defective uterine power. When labour is completed, the uterus may close over the polyp, without being further excited by its presence, and without the occurrence of hæmorrhage or any untoward symptom: it may be felt hard and contracted above the pubes—larger than it should be, but still without any formidable complication: or the polypus may be expelled into the vagina, or beyond it, and there remain, decreasing with the diminishing uterus, and without causing hæmorrhage*. A favourable case of the first kind, followed out, might lead to no worse symptom than a trifling hæmorrhage, like the lochia rather in excess; the tumor gradually getting smaller, until, as in Dr. Churchill's case, when about to tie it, we find it beyond reach, and the patient perfectly well. I think this result ought always to be aimed at, although it can only be anticipated when the polypus has been left entirely alone, and the uterus has not been provoked into constant action from attempts to explore its contents, or by the treatment consequent on a mistaken view

* *Practical Observations on Midwifery*, by Dr. Rambotham. sen.

of them. There is doubtless much difficulty in deciding what it is that occupies the uterus, when, after a natural labour, it remains large, with little or no bleeding, and the os closed. A second fœtus, or a coagulum, are the most ready suggestions; and the endeavour to get rid of either the one or the other by ergot or mechanical means, when a polypoid growth is really there, is likely to complicate the case, and peril the life of the patient. In the first case related, nothing could be more auspicious than the result; and yet it may be doubted whether the exhibition of ergot was not a dangerous practice, from its direct tendency, the polypus being attached to the fundus, to invert the womb. This danger was diminished from the time which had elapsed since delivery, when the uterine walls would be less yielding; and perhaps, too, from an effort at spontaneous separation, which I fancy must have existed in this case, in comparing Mr. Moon's expression of the stem being "something like a funis," with the large size of it when I afterwards examined it. I look upon the mechanical means which were adopted in the second case, when the polypus was thought to be another fœtus, as the exciting cause of the incessant and ineffectual uterine efforts which collapsed and destroyed the patient. It is therefore an important practical point to bear in mind, that a uterus remaining large, and evidently distended by something in its cavity after delivery, unattended, perhaps, by hæmorrhage or uterine pain, may contain a polypus. The diagnosis of it is to be sought in the negative evidence of there being no fœtal heart; the general configuration, size, and contraction of the womb; the absence of fœtal membranes, or their fulness from liq. amnii, or any notable part of a fœtus, as elicited by vaginal examination and exploring the abdomen; and, if uterine pain should come on, from the fixed state of the growth, as shewn by the reluctance of the womb to open and expel, as it would do, such moveable bodies as a coagulum or fœtus. When the polypus comes within reach of the finger, the os uteri being sufficiently open, or under powerful action, or its attachment being low down in the womb, a careful examination of it would readily detect its character.

If the uterus remains quiet, and hæmorrhage does not

supervene, the best treatment, in my mind, is to allow it and the polypus to diminish together, and to postpone any attempt at cure. If uterine action has been provoked, I think that every effort to still the womb should be had recourse to, by sedatives and opium suppositories, and enemata; allowing, in both cases, for the chance of the spontaneous disappearance of the tumor. Should, however, violent hæmorrhages come on, or uterine pain persist in spite of the attempts to appease it, it will then be necessary to remove the polypus; an alternative which the following cases very well exemplify. I am indebted to Dr. Radford of Manchester for them, an accoucheur of very great experience and deserved celebrity, in whose practice they occurred.

CASES COMMUNICATED BY THOMAS RADFORD, M.D., CON-
SULTING PHYSICIAN TO THE MANCHESTER LYING-IN
HOSPITAL.

CASE I.

I was requested by Dr. — to visit Mrs. H., residing about seven miles from Manchester, whom he had attended for some days with a general practitioner of the highest respectability. She had been delivered a fortnight, after a natural labour. The discharge afterwards became more profuse, and continued during the above-mentioned period, and frequently occurred in gushes. Paroxysms of violent uterine pains, attended by bearing-down sensations, greatly harassed her. The attentions of Mr. — were unremitting, and he always found the uterus contracted. His treatment was directed to mitigate constitutional symptoms and subdue local pains, and also to maintain and support the tonic contraction of the uterus.

No benefit was derived from the various remedies he made use of, but the vital powers continued to decline; and when I saw her, I found her in articulo mortis: indeed, she died in two or three hours afterwards. The countenance was expressive of great suffering, and, with the general surface, was extremely pale. The hand, placed over the hypogastrium, felt the uterus contracted, but larger than it should be at this period after delivery. On examining by the vagina, I

found the os uteri patulous; and on passing the finger onwards through it, I discovered a firm oblong tumor, attached to the anterior paries of the uterus, which it had dragged downwards and inwards. A plug was introduced, abdominal compress and bandage continued, and stimulants exhibited.

POST-MORTEM EXAMINATION.—No appreciable disease in any other organ, except the uterus; in which was found a polypus of an oblong shape, about two inches in length, and attached to the anterior part of the body. Its depending part was two inches in circumference, and its upper, or neck, about an inch and a-half. That portion of the uterus in the vicinity of its connection was dragged downwards and inwards.

CASE 2.

I VISITED Mrs. —, a patient of the Lying-in-Hospital, residing in Bury Street, Salford, who was reported to be flooding. She had been delivered, naturally and easily, the previous day. Afterwards, there was a considerable discharge of blood, which soon abated under friction, grasping the uterus, and cold vinegar and water to the external parts. A compress and bandage had also been placed over the uterus. I found her pale, and the pulse frequent and small. The discharge generally dribbled, but took place frequently in gushes: she was much harassed by violent bearing-down pains. The uterus was felt above the pubes, contracted, but rather larger than common. I now made an ordinary vaginal examination, but could discover nothing beyond the patulous os uteri. Not feeling satisfied with this mode of exploration, I passed the hand into the vagina, and the finger through the os uteri; when I felt a tumor, about the size of a large pear, which was attached to the anterior part of the uterus towards the left side. It was pendulous, and, as far as I could ascertain, had a narrow pedicle. I judged it to be a polypus; and knowing the danger to be apprehended from the insidious bleedings which occur in these cases, I at once determined to pass a ligature round the pedicle, which was effected without much trouble. A plug was introduced into the vagina, and secured; and a bandage, with a compress, placed round the lower

part of the abdomen. The ligature was tightened daily, without pain; and on the eighth day the tumor was detached, and the canula withdrawn. The polypus corresponded in size to the estimate formed of it before the ligature was applied. This patient perfectly recovered; although she required considerable attention, from symptoms of irritation and re-action consequent on loss of blood and intestinal irritation. There has been no regeneration of the polypus; and she has had three children since its removal, and in all, the labour was natural.

CASE 3.

I was called to a woman who had been delivered six hours, the labour having been natural. The discharge was greater than usual with her; and strong bearing-down pains, with gushes of blood, continued to distress her. Between the pains there was a continual dribbling discharge. The contracted uterus was felt above the pubes, rather larger and softer than it usually is; but when the pain recurred, it sensibly diminished in size, and became harder. In consequence of the violent uterine pain, I felt convinced that some irritating mechanical body was provoking the organ; as, a part of the placenta, a coagulum of blood, a polypus, or a partial inversion of the uterus; and in order to satisfy myself as to the real nature of the case, I introduced my hand into the vagina, and the finger through the os uteri, which was open. I felt a firm body, which, when pressed laterally, moved: and on carrying the finger along the surface, I found it less above than below. I therefore concluded it was a polypus. I gave a drachm of laudanum to quiet the pains, and applied cold vinegar and water to the external genitals to restrain hæmorrhage until I could fix a ligature on the growth. These, however, were ineffectual; and whilst I was waiting in the house she was seized with a very strong bearing-down pain, like one of the last expulsive pains of labour, which induced me again to examine. I found the tumor in the vagina, at the os externum, quite detached from the uterus, as large as a middle-sized orange, with a slender pedicle. From this time the pains gradually subsided, and the hæmorrhage ceased. The patient recovered without the slightest interruption.

CASE 4.

Mrs. BUCKLEY, midwife, requested me to see a poor woman, a patient of the Lying-in-Hospital. I learnt that the child had been born; but immediately afterwards a profuse discharge of blood took place, attended with severe bearing-down pains. Mrs. B., on examining, thought she felt the head of a second child; and, on account of the flooding, sent for me. In the mean time she applied a bandage and compress, and cold vinegar and water externally. I found the poor woman very pale, with a frequent and small pulse, and complaining of great bearing-down pain. The discharge frequently came in gushes, but, in the intervals, insidiously dribbled away. The uterus was felt above the pubes, considerably larger than usual, but not large enough to contain another child. By a vaginal examination, I felt a tumor just above the os uteri, firm in texture, and mobile; and, as far as I could judge, about the size of the head of a six or seven months' foetus. From the positive circumstances attending it, and also the negative symptoms as to the existence of another child, I concluded it to be a polypus. The placenta was still retained.

Before positively determining what ultimate plan to adopt, I thought it desirable to pass my hand into the uterus, to ascertain, as far as possible, the size of the growth, the thickness of its pedicle, and its connection, and also to remove the placenta. Finding I could readily grasp the tumor, and that its pedicle was small, I at once determined to separate it by torsion; and after persevering for some time, I fortunately succeeded. I now searched for the placenta, which I found loose, and which, with the polypus, was removed. A considerable quantity of fluid and coagulated blood followed. Some brandy was given to the patient, who had become faint. Friction with grasping pressure was applied over the uterus, and a drachm of secale cornutum given, and repeated in a quarter of an hour. An abdominal compress and bandage were firmly placed on, and a drachm of laudanum ordered. The discharge, which was large at first, gradually diminished. Strict injunctions were given to the midwife to remain for some time with the patient, and attentively watch the progress of the constitutional symptoms, and also frequently to

examine whether the discharge at all increased; and if any change occurred, immediately to send for me.

The next day I found my patient better than I expected; but she complained of headache and a throbbing sensation. She had slept, and had passed urine, but the bowels had not been moved. I ordered an evaporating lotion to the head, and dec. aloës c. ʒiſs. early in the morning; and if the bowels should not act in six hours, to have a warm-water enema.

The following day quite as well. Bowels moved: passed water. Still complains of throbbing and pain in the head. Pulse frequent and irritable. To take,

Liq. Ammon. Acet. Mist. Camph. āā ʒſs. Tinct. Hyoscyam. m xx
4tis horis.—Evaporating lotion.

It would be tedious to make a daily report of the symptoms and treatment. Suffice it to say that the former were all along those arising from loss of blood; and the latter was the same as above stated, also strictly attending to position and diet. At the end of a fortnight she was tolerably well recruited.

Dr. Fergusson, of King's College, has related two cases, in an Appendix to Dr. Lee's Paper in the Medico-Chirurgical Transactions, in one of which, the polyp, appearing before the head of the child, was mistaken by a practitioner for the head, and the forceps applied on it, with the immediate effect of dragging it lower down. The scalp gave way, and a putrid full-grown child was extracted. When Dr. Fergusson saw her, two days afterwards, she had passed a polyp larger than the doubled fist; and she was sinking from peritonitis. On examination, he found that the polyp had been attached above the cervix; and where the peduncle had adhered, was a hole, communicating with the cavity of the peritoneum, which had been caused by the traction, tearing the root of the stalk, and the consequent ulceration. In the second case, Dr. Fergusson thought he felt the scrotum of the child; but afterwards he ascertained that the head was presenting, though it was still very high. He traced a soft and compressible tumor, the size of a hen's egg, into the os uteri; and having squeezed it against the side of the pelvis, the head easily descended, and the child was born

alive. A frightful hæmorrhage followed the delivery of the placenta, and the patient was rescued with difficulty. A year afterwards the tumor was there, and the woman would not permit its removal.

- These cases so well illustrate this particular association of polypi with pregnancy, that they supersede the necessity for detailing other instances which might be quoted from medical records. We find, then, that a polypus developed, during pregnancy, within the uterus may, if it be attached near the os or cervix, be propelled before the child's head; or, when labour is ended, be enclosed by the contracting womb, occasioning little or no hæmorrhage; or, on the other hand, it may cause frightful and alarming bleedings, which are greatly aggravated by constant pains and bearing-down efforts. The hæmorrhage in these cases has been ascribed to the polypus preventing the full contraction of the womb, and the consequent exposure of the valvular orifices of the veins on its surface. But this explanation does not accord with the fact of the hard and contracted state of the uterus as felt above the pubes, and with the cessation of the bleeding when the tumor is tied, although left in the womb exerting the same mechanical action as before. It would obviously be superfluous to treat a polypus of this kind by ligature only, leaving the same absolute bulk of growth within the womb, if the bleeding was invariably and solely caused in this way.

The combined effect of the weight of the polypus with the uterine action in causing partial inversion of the womb, and so greatly augmenting the danger of the case, is a practical point well worthy of notice. With regard to the treatment, there can be little doubt, when such formidable symptoms present themselves immediately endangering the life of the patient, that the prompt removal of the tumor is the practice that ought to be resorted to; and the particular means to be selected must depend on their adaptation to the circumstances of the case. If the pedicle of the tumor be within reach, I should prefer, having first tightly drawn a ligature around it, to cut off the polypus immediately below it; as this practice would be likely to quiet the womb, besides arresting the hæmorrhage by diminishing the foreign body which provoked its action, and would save this organ

from being exposed to the influence of so much putrid matter, by the decomposition of the polyp below the noose. If, however, the polypus is so enclosed by the womb as not to be so readily reached for this purpose, the application of the ligature alone upon its stem is the next best means to be had recourse to. Should the pedicle be ascertained to be small, and the growth very moveable, torsion perhaps may be attempted. But I regard this forcible tearing away of veins and fibre as a dangerous expedient, likely to cause phlebitis and ulceration of the uterine walls, and one which is doubly hazardous when the womb has so recently been gravid. Dr. Radford says of it: "How far the practice of torsion in all cases would be justifiable I am unable to say from experience; but am inclined to think it would not: but where the tumor is of moderate size, and has a slender pedicle, I should not hesitate to adopt it."

The results of the consideration of cases in which polypus and pregnancy have been combined in the way alluded to may thus summarily be stated:—

1. That various-sized polypi—and some very large—may be developed in the uterus during pregnancy, without at all interfering with gestation, or in any way impeding parturition.

2. That they are to be suspected when the uterus remains larger than usual after parturition, although hard and contracted, and when ineffective uterine efforts continue, attended by hæmorrhage; and that they are liable to be mistaken for a secondary fœtus.

3. That the distinction between an included polypus and a second fœtus ought carefully to be made out before any artificial attempts to deliver are begun; as, by confounding them, a polypus has been perforated, and the uterus rent and injured both by the hand and the forceps.

4. That the hæmorrhage they occasion is sometimes slight; at others sudden and overwhelming: sometimes it occurs immediately after the birth of the child or placenta; at others it is delayed for a fortnight or three weeks; but it is frequently a harassing daily loss, which defies ordinary remedies to arrest it, and usually occurs in gushes.

5. That the uterus may propel the polypus before the

child's head; or, after delivery, it may close over the growth, and remain quiescent; or paroxysms of uterine pain continue, with bleeding, or constant unremitting action of the womb, causing severe distress, exhaustion, and death.

6. That the uterine action may occasion, in some instances, the separation of the growth; in others the partial or complete inversion of the womb. If the polyp be attached to the cervix, or immediately above it, it may propel it into the vagina, separating perhaps some cellular adhesions; or, lastly, that its constant forcing, with the weight of the polypus, may prolapse the uterus, and force the polypus beyond the external parts.

7. That the treatment must depend on the prominent symptoms, and on the practicability of applying mechanical means: that, if no hæmorrhage be present, or it be but slight, every endeavour, by opiates and rest, should be made to quiet the womb, until the shock of parturition, the uterine circulation, and that of the polypus, have diminished: that, if the hæmorrhage be violent or continuous, and intractable, or if the incessant contractions of the womb threaten the life of the patient, the polypus is to be removed.

8. That a polypus may be encircled by a ligature, or, after that, be excised, or primarily twisted off, both during, immediately after, or at any time succeeding parturition, without the necessary production of bad symptoms; but that the ligature alone, or ligature and excision, are the preferable plans of operating.

9. That a polypus thus removed is not regenerated; nor does it necessarily cause sterility, or occasion untoward symptoms in succeeding labours.

PLATE I

A polypus partially inverting the unimpregnated uterus.



Plate 1.

PLATE II.

Fig. 1. A polypus made up of small cells.

Fig. 2. A small polyp attached above the cervix, whose free extremity has grown upwards towards the fundus of the womb.

Figs. 3 and 4. Channelled polypi from the cervix, shewing the outer openings and the channels within.

Fig 1.

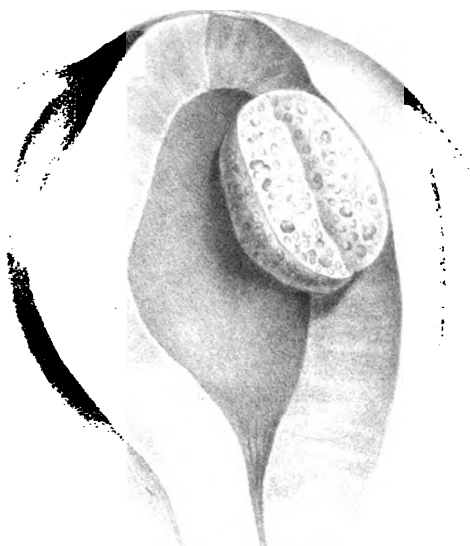


Fig 2.



Fig 4.

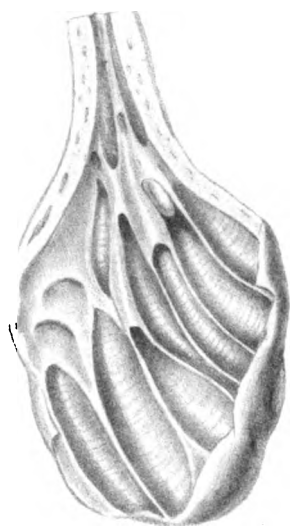


Fig 3.



OBSERVATIONS
ON
LITHOTOMY.

BY BRANSBY B. COOPER, F.R.S.

(*Continued from Vol. I. p. 422.*)

CASE I.

Calculus Vesicae—Operation—Urine passed through natural passage on third day—Rapid recovery.

JOHN REEDER, aged 4 : admitted into Dorcas Ward, under Mr. Cooper, on Nov. 28, 1827 : of dark complexion : placid disposition : labouring under the usual symptoms of calculous disease ; having frequent desire to pass urine ; swollen and lengthened prepuce, from constant pinching ; great pain on exertion. Prepared for operation on Dec. 11 ; but erysipelas being in the ward, it was thought advisable to postpone it until Dec. 18, when it was performed.

Dec. 19. Slept well : but little irritation : bowels open once : was much excited when visited by the pupils : part of urine through natural passage on the third day.

23. Is a little flushed this morning : great smarting at wound, produced by the passage of urine. He had some irritative fever, which continued for twelve days, indicated by restlessness, white tongue, costive bowels, &c. The usual remedies were adopted.

Jan. 5. All the urine passes through the natural passage : wound healed, and closed : is quite well, and able to run about.

He subsequently became irritable : attended with fever and re-opening of the wound ; no urine, however, passed through it. He gradually improved in health, the wound again healed, and he was discharged from the hospital on the 26th of January, quite well.

CASE 2.

Calculus Vesicæ—Symptoms excessive, but relieved by Medicine—Operation—Recovery.

WILLIAM ELMORE, aged 6: admitted into the hospital on Feb. 5, 1833, for calculus in the bladder.

His mother stated that he had had two severe attacks of inflammation of the chest during his infancy. About two years since she noticed a considerable gravelly sediment in his water, which was at times more abundant than at others; and about twenty months back she observed it to be mixed with blood; the child, however, being free from any other symptoms. She procured advice; and the following medicine was prescribed,

Inf. Gent. C. \bar{c} Sodæ Subcarb. et Sp. Æth. Nit. to be taken three times a-day.

Under this treatment the child improved; and his urine became perfectly natural: he had, however, some difficulty in passing his water, but this soon subsided. He remained well till May last, when he began frequently to pull and squeeze his prepuce: and shortly after this he passed blood with his urine, which he had great difficulty in voiding, and sometimes suddenly stopped: he had also an inclination to void his fæces with his urine. He complained of more pain at night than in the day, unless increased by his taking exercise. The child took the same medicine that had formerly relieved his symptoms up to Christmas; he, however, became worse, and his sufferings were intense, the only position in which he found ease being on his hands and knees. He was sounded by a medical gentleman, but no stone detected: shortly afterwards he was again examined by another surgeon, and with similar results. The mother now applied to a woman who was famed for the cure of stone; and who gave the child some drops composed of oils of amber, turpentine, and juniper, three times a-day, and with temporary relief to the child. The symptoms soon increasing in severity, she applied to the Woolwich and Deptford Dispensary: the child was sounded, and a calculus immediately detected. Ordered,

Liq. Potass. Syrup. Papav. Pulv. Trag. C. ex Aq. Ment. t. d.

This greatly relieved the irritation, and many of his distressing symptoms.

Feb. 8. Mr. Cooper sounded the boy, and immediately detected a stone.

26. His bowels have been opened twice this morning, from the castor-oil which he had taken early: a glyster was thrown up at 12 o'clock, which freely emptied the rectum; and the operation was performed at 1 o'clock. The opening into the bladder was effected without the least difficulty: the forceps also were readily introduced; but it required three or four attempts before the stone was removed; and then, in consequence of the peculiar form of the stone, the forceps did not indicate having grasped it, owing to its fitting in the hollow of the blades.

From the time of the operation he rapidly convalesced, without having suffered from a single bad symptom. He left the hospital in March.

The calculus was analyzed by Dr. Rees, and was found to consist of a nucleus of oxalate of lime, covered by the triple phosphate.

Prep. 2191⁶⁰. Calculus consisting of—internally, oxalate of lime; externally, triple phosphate and carbonate of lime.

CASE 3.

Calculus Vesicæ—Operation—Quite well in three weeks.

GEORGE WRIGHT, aged 7, an intelligent looking boy, was admitted into Luke Ward, June 5, 1837. He has suffered from symptoms of stone for six years, but not very severely: he complained of slight difficulty in making water; and used to void it more frequently than natural, experiencing a tingling sensation at the extremity of the urethra, which caused him to pull the prepuce: when passing his water, he would frequently have a desire for stool at the same time. His symptoms continued very trifling until a short time before admission, when they became slightly increased: he could not run or jump about as he was wont to do: he could not hold his urine more than three hours at a time. His water was clear, and never had been the least tinged with

blood: general health very good. A sound was introduced into the bladder, and a stone detected.

On the 20th of June the lateral operation was performed. The stone was extracted in forty seconds: in size it was about that of a small walnut, covered over with a layer of beautiful large shining crystals, of the triple phosphate kind.

On the evening of the operation the water passed by the natural passage: he complained of smarting pain during micturition. In consequence of his being restless, he took one tea-spoonful of syrup of poppies. No bleeding has occurred.

June 21. Has passed a comfortable night: water passes through the wound, and produces a slight smarting pain: countenance cheerful: pulse natural.

This child afterwards suffered from pain and distention in the course of the colon, attended with slight febrile symptoms. The administration of an active mercurial purge, with care and diet, soon dispelled all apprehensions as to the result; and the patient left the hospital, cured, at the end of three weeks.

Prep. 2142⁸⁰. *External layer*: crystals of oxalate of lime deposited on a dense layer of oxalate of lime with a minute proportion of phosphate of lime. *Internal soft layer*: carbonate and phosphate of lime, with lithic acid*.

CASE 4.

Calculus Vesicæ—Operation—Recovery.

THOMAS GROVES, aged 6, a ruddy fair child, was admitted into Guy's Hospital on 27th of October 1841, suffering under symptoms of stone. It is now about three years ago since his mother first observed that he had difficulty in micturition: this has now considerably increased; and he frequently has retention for three or four hours, during which he suffers a great deal. The urine is occasionally tinged with blood: and when micturating, he stands with his body bent forwards, and his knees approximated: the prepuce is much elongated.

* For more elaborate account of the analysis of the calculus, &c. &c. see Guy's Hospital Reports, Vol. II. p. 407.

Passes his water involuntarily, frequently having a motion at the same time. General health good: appetite good: sleeps well. Never been sounded.

Oct. 28. Was sounded by Mr. Cooper, and the presence of a small stone ascertained.

Nov. 5. Appears rather feverish: skin hot: face flushed; tongue furred. Ordered,

Cal. c̄ Rhei gr. viij. st.; et Mist. Salin.

9. Bowels freely opened; but the motions are dark, and offensive. Ordered,

Hyd. c̄ Creta c̄ Pulv Rhei o. n.

15. Much improved: motions more healthy.

Dec. 1. Bowels have been well opened; and the motions are quite healthy: but there is a great listlessness about the boy, which does not appear natural. As Mr. Cooper thought this arose probably from the irritation kept up by the stone, he determined to operate. The operation was performed in three minutes. There was some little difficulty in seizing the stone, owing to its small size. No hæmorrhage.

From this time the child never had a bad symptom. The water came through the urethra on the 20th: the wound healed rather sluggishly; but he left the hospital quite well.

CASE 5.

Calculus Vesicæ—Small Stone—Water passed by natural passage six days after operation; and patient quite well at the end of three weeks.

DAVID DOUGLAS, a child 5 years of age, was admitted into Guy's Hospital on May 4, 1841, under Mr. Cooper, suffering from symptoms of stone. His mother states, that he has had some difficulty in passing his water for the last two years, but that his symptoms lately have become much aggravated.

May 7. Mr. Cooper sounded him; and having ascertained that a stone was present, decided upon removing it the following Tuesday.

12. Mr. Cooper performed the lateral operation, and removed a small stone: there was very little hæmorrhage, and the operation did not last more than forty seconds.

13. Has passed a comfortable night, and going on perfectly well.

No unfavourable symptom occurred throughout the cure: he passed his urine by the natural passage the sixth day after the operation; and was presented quite well on June 1st, three weeks after the operation.

CASE 6.

Lithotomy after Lithotrixy.

GEORGE JARRETT, aged 66, admitted June 2, 1842, into Luke Ward, No. 19. He states, that about three years ago he first experienced considerable cutting pains on making water, which gradually increased, and was attended by a mucous deposit in his urine. About a year ago a stone was first discovered, for which he went to St. George's Hospital, where the operation for lithotrixy was performed: after which no unfavourable symptoms followed; and in seven weeks he left the hospital, apparently quite cured: but in less than a month afterwards he again felt all the symptoms of stone in an aggravated degree; and gradually became worse up to the present time. He now complains principally of great pain after micturition: water thick, and has much deposit: the stream is often suddenly stopped, and sometimes dribbles away at night: cannot retain it for any length of time.

June. 8. Mr. Cooper performed the operation of lithotomy; and removed a stone the size of a pigeon's egg, weighing ten and a half drachms.

July 30. Left the hospital quite well.

CASE 7.

Calculus Vesicae—Strumous Constitution—Small Stone—Water passed by natural passage eight days after the operation.

THOMAS YOUNG, aged 9, was admitted into Guy's Hospital, under Mr. Cooper, June 26, 1841: is a pale strumous-looking child with light hair, blue eyes, and extremely timid and nervous. His symptoms were not at all severe; and it was only at times that he appeared to suffer from the presence of a calculus. Mr. Cooper sounded him on the 10th of July; and having ascertained the presence of a stone, and pronounced it to be

a small one, fixed on the following Tuesday for its removal.

July 16. His bowels having been freely acted upon by a dose of pulv. rhei and calom., and his rectum cleared out about an hour before the time fixed upon for the operation by an injection, Mr. Cooper performed the common lateral operation, and extracted a small smooth stone, about the size and shape of a marble: there was some little difficulty in seizing the stone, owing to its roundness. A very little blood was lost; and when the patient was seen the same evening, he appeared quite comfortable.

24. Has gone on very well since the operation, with the exception that he is rather weak: his water passes by the natural passage. He was ordered a better diet; and from that time he rapidly improved, until August 20, when he was presented, quite well.

CASE 8.

Calculus Vesicæ—Operation—Large Stone—Recovery.

JOHN HUMPHREYS, aged 19: admitted into Luke Ward, No. 4, under Mr. Cooper, May 4, 1842: a healthy lad, of dark and swarthy complexion, living at Rotherhithe, where he has been employed as a shipwright, chiefly carrying heavy loads. His uncle was operated on, many years ago, at this hospital; and eleven stones, as large as a bean, were removed: he is now well and hearty. About ten years ago he was first the subject of gravel; giving rise to cutting pains, bloody urine, and frequent desire to micturate. These increased; and were accompanied with an itching at the end of the penis, and occasional retraction of the testicle. About seven or eight years ago he was an out-patient at the London Hospital. He was sounded by Sir A. Cooper, who pronounced the presence of stone: its removal by operation, however, his father would not permit. He has at times been able to work for five or six weeks together; but has frequent attacks of pain, with weakness in the loins, dribbling of urine, more especially on any undue exertion. Four or five years ago he passed some gravel, about the size of a pin's head. His health has never materially suffered.

May 5. Mr. Cooper sounded him, and detected a very large stone: the introduction of the instrument caused very

little pain. As he was suffering from febrile symptoms, he he was ordered,

Cal. gr. iij. Coloc. gr. xij. Ant. Pot. Tart. gr. $\frac{1}{4}$. statim.
M. M. c M.S. p. r. n.

He continued improving until the 12th, when he appeared to suffer from a kind of quotidian ague, and seemed far from being well. On the 14th he was ordered,

Cal. gr. ifs. Pulv. Jacob. gr. iij. m. ft. Pulv. st. sum.
Julep. Salin. ter die.

Under this treatment his symptoms soon subsided; and on the 24th Mr. Cooper operated. In consequence of the great size of the stone, the opening required to be enlarged by a bistoury; and with some difficulty a large oblong stone was extracted: it was covered by a peculiar incrustation, and weighed nearly 3iij. There was some bleeding. A piece of sponge was placed in the wound; and he was put to bed. Tinct. opii, m xxv. were administered. He passed a very comfortable evening, and slept well during the night.

The case went on from this time most favourably, not an untoward symptom recurring. He began to pass his water through the natural passage on the 3d of June; and on the 13th the wound in the perinæum was nearly closed, and he walked about the ward. He continued improving until Friday, June 24, when he left the hospital, quite well.

CASE 9.

Calculus Vesicæ—Lithotomy after Lithotritry.

THIS patient, an old man, had been in another hospital, where he had been three or four times lithotritized, causing him great suffering, without any relief. He came into Guy's Hospital with the full intention of having the operation of lithotomy performed; which was accordingly done by Mr. Cooper, on June 1, 1841. He recovered rapidly.

CASE 10.

Urinary Calculus—Sequelæ of Typhus Fever—Operation—Recovery.

THOMAS MATTHEWS, aged 14 $\frac{1}{2}$: admitted, under Mr. Cooper, on Jan. 5, 1839: a lad of scrofulous habit. As a child, he has had general good health, with the exception of suffering

from fits: these occurred at intervals of about a month, from the period of dentition till he was nine years old, when they altogether subsided. He has always had sufficient nutriment; has been in the habit of taking a pot of porter daily, and occasionally more; also, now and then, a little gin, whenever he suffered severely in passing his water: he thinks the pain was alleviated by this remedy for the day, but increased in severity on the next, and the urine was rendered thicker. He has had difficulty, pain, and sudden stoppage, in passing his water, as long as he can remember: pain when standing up, which was less when walking, and entirely left him when lying down: sudden shooting pains in the loins, groin, testicles, perinæum, and penis, particularly near the frænum; he compared it to that produced by a sharp-cutting instrument: he has frequent desire to pass water, and complains of much pain in voiding the last drops. Urine is frequently very thick; and, till the last two years, observed a red sandy deposit in it. When making water, was unable to stand upright; and within the last year has felt an inclination to pass his stools when micturating. Has not been able to ride on horseback for twelve months. Six months ago was attacked with typhus fever: during three weeks he was delirious; and for three months was obliged to keep his bed: in consequence of which he became exceedingly emaciated and weakened; part of the skin of the back and hips ulcerated. During the fever he experienced but little inconvenience from the stone; but after it had left him, he suffered much more from the presence of the calculus than he had ever done before: had tenesmus, and excruciating pain, either in lying, sitting, or standing; great discharge of ropy mucus with his urine; his stools occasionally flattened; his prepuce much elongated.

Since his admission into the hospital he has rapidly recovered his strength; all his ulcers, excepting one, have healed, and his local symptoms abated. His urine is generally nearly clear; passes it about twice during the day, four or five times during the night; it is not albuminous. He suffers scarcely any pain from the stone: his abdominal muscles are exceedingly rigid. He has had slight tenderness, ever since his admission, over the transverse arch of the colon: bowels

cases only should be published, without reference to unsuccessful results; as otherwise the inexperienced may be induced to believe that lithotomy is an extremely easy operation; and if in their own practice, under such delusion, any thing untoward should occur, they will be by far less capable of combating the difficulties, than if they had been made acquainted with the obstacles which they are to expect as liabilities in the operation. When we consider the great difference in the ages and constitutions of persons operated on for the stone, the variety of calculi both as to composition and size, and the variations in depth and condition of the parts cut through, it cannot be supposed that an accurate opinion can be given from *à priori* reasoning. In the operation of lithotomy, the surgeon should bear in mind that he must be, however cautious, more or less in the dark as to the difficulties which may present themselves; and it is only by meeting them with calmness and deliberation that the operator can ever hope to encounter them successfully.

In Case 11 it is to be observed some delay occurred from the forceps used having been too short, leading to the necessity for the introduction of another pair. Those I employed at first were the usual ones intended for children; but I have so frequently found them of an inefficient length, particularly in the instance of a capacious bladder, that I am in the habit of using larger forceps than are generally recommended; and have found considerable facility both in seizing and handling the stone, from the greater length of these instruments.

In Case 12 the operation was somewhat delayed by the incision I had made through the prostate being too small, rendering it necessary to use the knife the second time to enlarge the opening; but I consider this a fault on the right side. Many surgeons, I believe, are of opinion that less injury is likely to occur from an incised wound, even if it be a little too large, than from a lacerated one, occasioned by drawing the stone through the resisting prostate. But on this point I feel perfectly assured, that the incision through the prostate, made by the knife, should be no larger than just to admit the forceps; and that the finger of the operator, and the opening of the blades of the forceps, will be found the safest, and therefore fittest means of sufficiently enlarging

the aperture for the extraction of the stone. If the knife be used for this purpose, there is great danger of the pelvic fascia being cut; and the ill effects resulting have already been dwelt on, as one of the most frequent causes of the failure of the operation.

Case 13 offered a difficulty not very unfrequently met with, and must inevitably cause delay: and the only means to be employed, I believe, were those adopted in this case; namely, removing the larger pieces with the forceps, the smaller with the scoop, and the minute fragments by injecting the bladder. The necessity for the frequent introduction of instruments into the bladder, under these circumstances, demands the greatest gentleness in their manipulation.

Case 14 offers nothing worthy of particular notice.

Case 15 was highly interesting, as the patient was suffering from an albuminous state of his urine; which may, perhaps, be considered as a most unfavourable symptom for the performance of lithotomy. It is to be observed, however, that the urine may present the appearance of an albuminous deposit, by the application of heat only, from its alkaline condition, and without any disease of the kidneys; or it may present a similar appearance when nitric acid is applied, from the presence of lithic: and in every case, therefore, it is necessary to employ both heat and acid as tests of the state of the secretion.

The hæmorrhage which supervened in the four remaining cases is a frequent complication, one which sometimes proves fatal; and even when it had not occurred to any alarming extent during the operation, but recurring at different intervals, patients sometimes sink under the repeated bleedings. These cases require all the care which an attentive assistant can bestow; as, in many instances, the loss of a small quantity of blood may turn the scale; and unless a person be at hand to apply his remedies immediately, a life, which might otherwise have been saved, is lost. The keeping the patient cool, by free ventilation of the room, the administration of cold drinks, the application of ice to the perinæum, and pressure upon the bleeding vessels, are the principal means indicated.

I consider, however, the danger of bleeding may be much diminished by the mode of operating followed by the surgeon; and that if the urethra be not laid open in the bulb, there is but little fear of any important loss of blood: while, on the contrary, if the groove of the staff be cut down upon, anterior to the deep fascia of the perinæum, the artery of the bulb must inevitably be wounded. The operation is doubtless rendered more difficult by this deep cut into the urethra, but the safety of the step is a sufficient compensation for its adoption.

CASE 11.

July 25, 1826. Mr. Cooper performed lithotomy on a boy about three years of age. The patient had been suffering under the disease for two years. The straight staff was introduced; and the other steps of the operation performed in the usual manner: a short pair of forceps were now introduced; but the stone was found to lay a considerable way back, and on attempting to open them, it was found impracticable; they were withdrawn, and re-introduced, but with the same result. A longer pair of forceps were then used, and the stone removed. The child recovered without any unfavourable symptom, and left the hospital quite well.

The only remark to make in this case is on the size of the forceps being too small: had the larger pair been first employed, neither delay, nor the necessity for the second introduction of the forceps, would have occurred.

CASE 12.

Calculus Vesicæ—Deranged Primæ Viæ—Operation— Difficulties—Recovery.

SAMUEL WATSON, aged $4\frac{1}{2}$ years: a fat healthy-looking boy, but who had laboured under symptoms of stone in the bladder for two years, and who had been in the hospital for six weeks under treatment for a deranged state of the bowels as indicated by green slimy stools;—a circumstance which led to the operation being delayed

Jan. 13, 1829. The patient being placed on the table in

the usual manner, a sound was introduced; and the stone was immediately struck, leading to the supposition that it was of large size. The patient being bound, the straight staff was passed; which, from the smallness of the urethra, was of less size than usually employed. It was remarked that the first incision was large; but yet, from the depth of the perinæum, and the smallness of the groove in the staff, there was some difficulty in introducing the point of the knife; which, on being effected, was smoothly and readily passed into the bladder. Mr. Cooper then introduced the fore-finger of the left hand into the bladder; and finding that the prostate grasped his finger, was satisfied that the opening was not sufficient for the size of the stone: he therefore considered it prudent to enlarge the internal incision; when the forceps were introduced, and a rough stone, about the size of a walnut, was immediately removed, without any difficulty. It was observed that not a drop of urine followed the introduction either of the knife or of the forceps. The boy got quite well rapidly.

CASE 13.

On July 27, 1830, Mr. Cooper performed the operation of lithotomy on a boy between five and six years of age. There was some little trouble in extracting the stone; which, on account of its brittleness, broke when laid hold of, and a portion only was, at the first time, extracted: the remaining fragments were afterwards removed with a more appropriate pair of forceps, and likewise by means of a scoop. The bladder was then injected twice; and a good deal of foetid gravelly matter escaped with the water. The time occupied in the operation and extraction did not exceed ten minutes. The stone was of an oblong shape (the greatest part having been removed entire), having a peculiar foetid odour, small, about one and a half inches in length, thick at both ends, and narrow in the middle;—in fact, it appeared almost like two calculi joined together by a narrow neck: one extremity was somewhat larger than the other, which was evident on joining the broken portions together: the smallest, which was the part where a portion was

broken off, appeared to be composed of triple phosphate alone; whilst the other consisted of uric acid, with a thin layer of the triple phosphate collected on the surface. The wound healed quickly and the patient did remarkably well.

CASE 14.

Calculus in the Urethra—Operation—Recovery.

EDWARD MORLAND, aged 5, stout and tolerably-healthy child, was admitted into the hospital, January 1833, with symptoms of stone, and, as was afterwards proved, a calculus lodged in the urethra. His mother states, that he is subject to convulsive fits; and has been laid up several times with an affection of the brain. Nine months since she first perceived that he passed a large quantity of blood with his urine, which continued for two days, and then entirely left him: it appeared twice after this, at intervals of four weeks: at the time of the last attack, medical aid was procured, and medicines and fomentations administered: it was called by the medical man inflammation of the bladder. These remedies procured him relief; and he had no more discharge of blood, nor did he appear at all unwell for nearly three months, when he complained of great pain at the extremity of the glans penis, which indeed was sometimes so great as to force him to squeeze it. He had also, at this time, great pain in his thighs and scrotum; and his urine became thick and ropy, having a little sediment. These symptoms continued rather on the increase; and three weeks previous to admission he had retention of urine, which was relieved by the catheter: from that time, however, he had incontinence: his medical attendant gave him balsam. copaib. and other remedies, for nearly three weeks; and then recommended the operation of lithotomy, the symptoms having become excessive, and the incontinence unrelieved. Mr. Cooper sounded him, and found a stone situated in the bulbous portion of the urethra. He was placed on the operating-table about an hour after admission; and, on passing a sound, the stone was found considerably advanced in the urethra, and was now just behind the upper part of the scrotum. Mr. Cooper, under these circumstances, cut down upon the calculus, and removed it: it was three-quarters of an inch in length, and

had much the form of the bulb of the urethra. An elastic gum catheter was then passed into the bladder, and tied there; and the edges of the wound were brought together by adhesive plaister. The catheter was left in ten days (being taken out every other day to be washed), and the wound healed perfectly; a very small quantity of urine only having escaped through the opening, and caused slight extravasation, the ill effects of which were easily subdued by warm white wash.

Feb. 2. He is now perfectly well: no incontinence; and passes his water freely. He left the hospital shortly afterwards, perfectly recovered.

CASE 15.

Calculus Vesicae—Albuminous Urine—Operation—Recovery.

GEORGE EASTLAND, aged 10, a thin strumous-looking lad, with dark hair and grey eyes, was admitted into Luke Ward, August 15, 1836, with stone in the bladder. It appears that he had symptoms of stone when about two years of age; at which time he was sounded, but no stone detected. Since that time he has remained free from uneasiness till about a year ago, when he received a strain, which was followed by pain in the perinæum, and pain in passing his water. Never remembers having any sudden stoppage to the flow of water during micturition: has never passed any blood; neither has he any pain at the end of the penis, nor along the canal. Soon after his admission Mr. Cooper sounded him, and detected a calculus. Ordered,

Liq. Potass. m x. Tinct. Hyosc. m xij. Mixt. Camph. ʒiſs. h. s.

Aug. 20. His urine was found to be albuminous. He had severe pain over the region of the bladder: this was very considerably relieved by fomentations.

30. His general health being much improved, the operation was performed to-day: the stone extracted was nearly the size of a pigeon's egg.

31. Has passed a restless night: complains of smarting in the wound: pulse quick: skin cool: urine passed freely by the wound.

Carb. Sodæ. ʒi. Tinct. Hyos. m xxx. Aq. Puræ. ʒiv. capiat. coch. mag. ij. 6tis horis. c̄. Succ. Limon. stat. effervesc.

Sept. 1. Has had a comfortable night: pulse not so quick: tongue furred: no pain: water passes by the wound.—*Ol. Ricini. 3fs. statim.*

Sept. 2. Has slept well: no pain: urine passed by the wound: in all other respects improved.

The urine continued to flow entirely by the wound till eighteen days after the operation; then it began partly to pass through the natural passage: the wound continued to close but slowly. The boy complained of no uneasiness: his secretions were natural: appetite good: he slept well: his pulse continued rather rapid.

Oct. 27. He was sent to his friends in the country; the wound being nearly closed, and the urine passing entirely by the natural passage.

This boy perfectly recovered three weeks after his return into the country.

CASE 16.

Calculus Vesicæ—Symptoms well marked—Slight Hæmorrhage—Perfect Cure.

WILLIAM WALLER, aged 21, a man of melancholic temperament, with dark hair and eyes, pale, and sallow complexion, was admitted into Guy's Hospital, under Mr. Cooper, on the 15th of September 1841, suffering under symptoms of stone. He states that he has suffered from the disease since he was two years old: that when he was seven, the symptoms became worse, and he was admitted into the Colchester Hospital, where he was sounded; but it does not appear that any stone was detected, as he was only treated medicinally; and was presented, much relieved, after a stay of seven weeks. On his way home, however, the motion of the cart produced a relapse of his symptoms; and he was unable to pass his water. From this attack, however, he recovered, by rest and medicine: and he states, that from that time he has not suffered much, unless he used any unusual exercise, such as running, until about six weeks previous to his admission, when his symptoms became very much aggravated. He is frequently unable to void his urine, without lying down, which position affords him great relief: he experiences great pain at the end of the penis, especially during the passage of the last few

drops : has a frequent desire for micturition : whenever he uses any exercise, his urine becomes tinged with blood ; and when passing his water, is frequently unable to avoid evacuating his rectum. Under these circumstances, he applied for relief to a medical gentleman at Woolwich, who recommended him to go into Guy's Hospital. On September 16th Mr. Cooper sounded him, and detected a large stone ; but as the patient was out of health, decided on not operating at present.

On the 3d of October, the patient's health being much improved, and his bowels cleared out the day before, Mr. Cooper operated ; and removed a large stone, weighing about 150 grains, and covered with a peculiar coating. The operation was quickly performed ; and there was very little hæmorrhage. In the afternoon there was slight bleeding, which was stopped by placing a cold sponge on the perinæum.

4. Has passed a restless night, but now appears quite comfortable.

5. Bowels have been relieved ; appetite bad ; appears rather low ; in other respects going on very well.

Vini Rubri, 3vi. per diem.

Nov. 10. The wound is quite healed ; but, as he appears weak, and suffering from the air of the hospital, Mr. Cooper advised him to return into the country.

25. Mr. Cooper heard of him this morning : he is perfectly well, and has resumed his usual occupations.

CASE 17.

Calculus Vesicæ—Operation—Frequent Hæmorrhage—Recovery.

CHARLES CARRINGTON, aged 5½, rather a delicate-looking boy, was admitted into Guy's, under Mr. Cooper, October 10, 1841, suffering from symptoms of stone. It appears, from his mother's account, that he has suffered these symptoms for the last three years, but that they have become much more urgent latterly : has been under the care of a medical gentleman, by whom he has only been treated medicinally, and has derived transient benefit. Present symptoms :—he has a frequent desire to pass his water, with excessive pain in so doing : is liable to retention, during which he suffers acutely :

the prepuce is much elongated: and his general health appears much impaired, from the suffering he has undergone.

Oct. 12. Was sounded by Mr. Cooper, who detected a stone, and also an exceedingly rough bladder: the boy, however, being out of health, the operation was put off for the present.

22. The boy having been prepared by a dose of ol. ricini and an injection, Mr. Cooper performed the common lateral operation, and a small stone was extracted: there was rather more hæmorrhage than usual at the time, but it ceased on his being put to bed; it recurred, however, about a quarter of an hour after, and apparently proceeded from the artery of the bulb; there was considerable difficulty in stopping it, owing to the extreme irritability of the child, who was constantly crying for two hours subsequent to the operation. A piece of sponge was placed in the wound, and pressure was made, and kept up, by the finger of the dresser. Syr. papav. ʒi. was given him; and he was ordered to be kept quite quiet. About two hours after, the dresser having left him, the sponge was forced out by the cries of the child. The countenance was now blanched, with dark areolæ round the eyes; the pulse was hæmorrhagic; and the feet cold. The sponge was replaced, the pressure again applied, and strict orders were given that he should be closely watched: warm flannels were applied to the feet, and another dose of syr. papav. was given him.

11 P.M. There has been no return of the hæmorrhage; and he has had a little sleep. The pulse has slightly risen. The sponge was not removed, as the urine passed freely through the wound.

On the 27th and 29th, hæmorrhage recurred to such an extent as almost to destroy the patient; but was however again restrained by pressure. From this period, by the administration of tonics and generous diet, he rapidly improved in health, and left the hospital on the 6th of December quite well.

CASE 18.

Calculus Vesicæ—Operation—Hæmorrhage—Recovery.

WILLIAM FOSTER, aged 25: admitted into Naaman Ward, No. 15, on June 15, 1842, under Mr. Cooper: a carpenter by

trade, living at Mitcham: of temperate habits, and good health. From infancy has laboured under symptoms of stone; has experienced pain in passing his water, of a burning kind, at the end of the penis, and frequently attended with sudden stoppage to the flow of urine, which latter was occasionally bloody. He complains also of pain and weakness in the loins, which is generally relieved by sitting down. Before admission, he had been sounded about three times; the first time was about a fortnight back, and a stone was then detected. His pulse is pretty good: tongue pale, and moist. None of his family have been subject to stone.

June 16. Mr. Cooper sounded him, and detected a stone lying on the right side of the bladder: it seemed to be small, round, and hard.

19. Mr. Cooper wished the urethra to be gradually dilated, in case lithotrity should be had recourse to: a No. 8 sound was therefore introduced, without giving any pain.

21. As the patient preferred the operation of lithotomy, Mr. Cooper performed it to-day, and removed a tolerably large stone in a very short time. A large deep arterial branch was divided, and bled rather freely: a ligature was applied to another more superficial vessel; and the patient put to bed.—Ordered,

Tinct. Opii, m xxx. ex Aquâ statim.

3 o'clock P.M. Hæmorrhage has been going on to some extent, notwithstanding plugs of sponge in the wound. He complains of much pain in the penis. While straining to void his water, he forced out a large coagulum; and the artery began to bleed freely. Constant pressure on the ramus of the left ischium was made, by means of a piece of sponge, and the introduction of the fore-finger into the wound. This was continued for about three quarters of an hour: lint, dipped in cold water, was then applied, and pressure made with a cork.

On the 25th, whilst straining to pass his urine, hæmorrhage again commenced; but was quickly stopped by the introduction of a sponge plug into the wound, and placing a bottle of cold water between the thighs.

He was presented, cured, on the 3d of August.

CASE 19.

*Calculus Vesicæ—Operation—Hæmorrhage on the tenth day—
Repeated Bleedings—Recovery.*

EDWARD CORDON, aged 27: a native of Harlow in Essex: a strong muscular man, but not of a very healthy appearance: is married, and has four children: was admitted into Luke Ward, June 29, 1837, with calculus in the bladder. Has laboured under symptoms of stone for the last twenty years; during the greater part of which time, he had been subject to hard work, and poor living. He first experienced difficulty in voiding his urine, then great pain during and after micturition. For these symptoms he took medicine, with considerable relief. No instrument had ever been passed into the bladder. He was never entirely free from these symptoms: occasionally he passed blood with the urine, without any assignable cause: sometimes he would void his urine only four or five times during the day; at others, perhaps thirty times.

About March last he became worse: had extreme difficulty in passing his water; with great pain at the end of the penis; and a constant desire to micturate. The urine deposited a thick mucus, which adhered to the vessel very tenaciously. Occasionally, when voiding his urine in a full stream, it would suddenly stop, producing intense pain along the urethra, and a sensation of weight at the neck of the bladder. He complained of pain above the pubes, shooting through to the back: a blister was applied at the painful part, and he had narcotic medicines. His symptoms were much aggravated; he suffered most intense pain; and passed a large quantity of blood with his urine. He then got better; and continued in the same state till May, when he was sounded for the first time, and a stone detected. An operation was proposed, but was objected to by the patient. Since then, his symptoms increasing, he became anxious to have the operation performed, and was admitted into the hospital for that purpose.

At this period, his symptoms were not so severe as in the generality of such cases: the urine was rather deficient in quantity; of a light colour, with a mucous deposit. The following day he was sounded, and a stone immediately struck,

which could be heard at a very considerable distance. His general health is good: bowels rather costive: pulse 80, soft and compressible: skin cool.

Erysipelas being in the Ward, the operation was postponed until the 18th of July. Previous to the operation, the bowels were freely emptied by an enema. After the first incision, considerable hæmorrhage took place, owing to the large size of the superficial vessels: some difficulty was experienced in seizing the stone, from its large size and form. After the operation, which occupied about two minutes, hæmorrhage, to the amount of two or three ounces, occurred; which was checked by making pressure upon the perinæum with ice in a bladder. He complained of being faint, and felt inclined to vomit: pulse 82, feeble. Pressure was afterwards removed, but the ice continued to be applied.

Hæmorrhage recurred on the 28th and 30th, and August 1st and 2d, without any apparent cause, to such an extent, as considerably to lessen the hopes of recovery; but by applying ice to the perinæum, and the introduction of a plug into the wound, it was completely stopped; and he eventually quitted the hospital perfectly well.

The calculus was of the mulberry kind.

CASE 20.

Stricture of the Urethra—Umbilical Fistula—Much improved by wearing a metallic Catheter in the Urethra—Instrument broke—Operation of Lithotomy performed—Did well—Operation for the Fistula—Fatal on seventh day.

WILLIAM TAYLOR, aged 40; shoemaker: states that about five years ago he had stricture, for which metallic instruments were frequently passed: after this he enjoyed pretty good health up to the present time, excepting incontinence of urine. Within the last ten days tumefaction and redness was observed at the umbilicus; to which he applied some shoemaker's wax: about ten or twelve hours after its application, about a pint and a half of urine passed off, in a full stream, from a small orifice in the umbilicus, now for the first time observed; and the flow through the urethra then stopped. At the time of admission into the hospital, on the 8th day of January 1830, his symptoms were, an alternate

flow of urine from the orifice of the umbilicus and urethra ; scanty in quantity from the latter, very turbid, and of a reddish colour, apparently from an admixture of blood : pain, on pressure, over the right lumbar region ; and, moreover, on pressing the right iliac region, an irresistible desire to micturate was induced. His general health good : cutaneous perspiration scanty. The catheter has been daily introduced, and small quantities of urine been drawn off.

Haut. Sennæ. C. ʒiſs. cras mane sumend.

Jan. 10. Ordered,

Inf. Cascar. c̄ Sod. Carb. et Tinct. Hyos. ʒft. m. ft. Haut. t. d. sumend.

12. The urine is still constantly passing off from the umbilicus, in a full stream. Pressure was ordered to be made over the umbilicus, by means of lint and adhesive plaister.

14. No discharge from the umbilicus : he retains his urine better ; and it passes off from the urethra much clearer, and in larger quantities.

17. The urine again passes from the umbilicus, notwithstanding every attempt, by means of pressure, &c. has been made to stop it.

20. Continues much the same since last report. Sir Astley Cooper has seen him ; and has proposed to Mr. B. Cooper the performance of a Taliacotian operation. Much mucus passes with the urine.

30. Has been ordered the use of a bed-chair, to habituate him to a semi-erect position : a catheter to be kept constantly introduced ; and his bowels to be regulated by mist. magn. c̄ magn. sulph.

March 5. Mr. Cooper has expressed a reluctance to perform the proposed operation, believing but little benefit is likely to be derived from the procedure.

May 19. The opening is very much smaller, and but little urine now passes through it : Mr. Cooper still objects to the operation ; and ordered him to wear a metallic elastic catheter.

June 30. No urine has passed from the umbilicus for some time : the elastic catheter has been constantly worn, with

apparent good effect: it is frequently withdrawn, cleaned, and replaced: his general health is improved: there is less mucus passed. To continue with the catheter.

July 29. Has worn an elastic metallic catheter since May; and appeared to be doing well till this morning, when, as he was getting out of bed, to have it made, the instrument suddenly broke, without any apparent cause; and on withdrawing it, which he did himself, he discovered that about three inches of the lower portion of the catheter was left in the bladder. On examination, the broken portion could be distinctly discovered in the prostatic portion, partly extending within the bladder. The operation of extraction, by Sir Astley Cooper's urethral forceps, was attempted by Mr. Callaway, for some time; and although he could occasionally seize the retained portion, still all attempts were unsuccessful.

30. Has passed a restless night: skin hot, and dry: tongue furred: irritation very considerable: urine passes freely through the fistulous opening in the umbilicus. At 3 o'clock P.M. Sir Astley Cooper attempted the extraction by means of the forceps: he used some little force, but was unsuccessful.

31. Great pain over the hypogastric region: has voided blood by stool, since the efforts used yesterday: tongue furred: urine passes freely by the umbilicus, but none by the penis. Catheter unable to be introduced, from the great irritability of the urethra. Bowels open: pulse 90, and soft.

August 3. Mr. Cooper commenced an operation for its removal, which was in every respect similar to the lateral operation of lithotomy. The second incision opened the membranous portion of the urethra, and divided a part of the left lobe of the prostate gland: several attempts were now made to seize the portion of catheter, by means of the urethral forceps, but ineffectually. The prostate gland was then completely divided, and the bladder opened; and after a few efforts, the broken portion of catheter, about three inches in length, was extracted with the lithotomy forceps.

6 o'clock P.M. No hæmorrhage: tongue clean, and moist: no sickness: pulse 120, and soft: is in no pain: urine passes slightly through the penis and umbilicus, but also freely by the wound.

11 o'clock P.M. Sleeps at intervals: pulse 120, much stronger, and wiry: in no pain.

August 5. Appears comfortable this morning: the urine passes freely through the catheter: no sickness: pulse 96, and soft: tongue clean: no tenderness over the abdomen on pressure: a dull pain across the umbilicus.

20. This patient having recovered from the operation, Mr. Cooper intends to attempt the radical cure of the fistula.

Surgeons, equally as physicians, are greatly indebted to Dr. Bright, for his discovery respecting the diseased condition of the kidneys, as indicated by an albuminous state of the urine: as not only may it be said that another important disease has been detected, but the circumstances under which operations ought, or ought not, to be performed, are well laid down; and our prognosis, from this additional knowledge, much more closely defined. It is clearly proved, that persons affected with this disease are particularly prone to inflammation of the serous membranes, and without any other apparent cause; and it may truly be said that the majority so affected fall victims to the disease. It must be apparent, if inflammation be excited so readily in such cases, that a surgical operation, and particularly that of lithotomy, must lead to a dangerous liability of peritoneal inflammation; and this is borne out by the fact, that in a large proportion of the unsuccessful cases of lithotomy, and in which peritonitis has proved fatal, the kidneys are found diseased. But even in those cases in which peritoneal inflammation does not supervene, as concomitant with disease of the kidneys, still such patients frequently sink into collapse, after formidable operations, and without there being any attempt at reparation. It becomes, therefore, a very cogent question, whether an operation should be performed, in any case on a patient suffering from the "*Morbus Brightii*." The existence of this disease up to a certain extent may not perhaps absolutely militate against the performance of surgical operation; but wherever it exists, even in the slightest degree, it is to be considered that the prognosis must be proportionally unfavourable. In such cases, and in which stone in the bladder exists, lithotripsy may

frequently be employed, as a means of diminishing the danger; and may certainly be resorted to even when lithotomy is utterly inadmissible.

Another ill effect seems also to result from this degeneration of the kidney; namely, the liability of persons labouring under this disease to hæmorrhage after operations; arising, probably, from the blood being deprived of a large proportion of its fibrin by the kidneys, and constituting, perhaps, what may be termed an hæmorrhagic diathesis.

When pus occurs in the urine, as a concomitant symptom with stone in the bladder, it becomes a very embarrassing question, as to whether this abnormal secretion is formed from the kidneys or the bladder?—If from the latter, it is to be considered as much less unfavourable than if from the former; but, in either case, a surgeon ought to postpone the operation, and attempt to restore a healthy secretion of urine by medicines and strict attention to diet. If, from symptoms, there be reason to believe the pus proceeds from the kidneys, it is scarcely necessary for me to state how hazardous an operation must be, and how slight the chances of recovery: for if this disease does not yield to remedies, death is inevitable; and the condition of the kidneys, as found in fatal cases of this kind, sufficiently proves, from the extent of disorganization, the impossibility of reparation.

When the pus proceeds from the bladder, it does not generally preclude the propriety of the operation of lithotomy, even although remedies may fail to stop its formation; for I have known the bladder entirely recover itself so soon as the extraneous body was removed from it. The great question to be decided is—whether the kidneys, bladder, or both, be diseased; and I confess, as far as my experience has gone, that the solution of this question is, in the majority of cases, very difficult; but may be sometimes discovered by a close investigation into the early history of the disease: for it generally happens, if the kidneys be the seat of the disease, that the patient had suffered a deep-seated pain in the loins long before anything abnormal had been found in the urine, attended also with enlargement and tenderness in the lumbar regions, as further indicating disorganization of the kidneys.

When the bladder is the seat of the disease, we usually find it preceded or accompanied by more or less pain above the pubes, and for some time previously mucous or earthy deposits mixed with urine.

These observations are not intended to direct the attention wholly to the state of the kidneys, but equally so to the other important viscera; as I believe it is only by observing accurately the condition of every vital organ that any surgical operation can be undertaken with a just estimate of its probable results: still, I must acknowledge I am inclined to believe that the kidneys are, more frequently than any other organ, the cause of untoward results after operation, and more particularly after lithotomy. These remarks have appeared to me necessary, as explanatory of the views which have directed my practice in the treatment of the cases which I have related.

CASES WHICH TERMINATED FATALLY.

CASE 21.

Calculus Vesicæ—Extravasation into the Cellular Membrane of the Pelvis—Peritonitis—Operation—Death.

ALFRED DIXON, aged 6: admitted into Job Ward on June 26, 1827, with stone in the bladder; and, from his healthy appearance, he did not appear to have suffered materially from his complaint. The stone was readily detected, and ascertained to be a small one. The operation, in which the straight staff was used, was performed on the 10th, and nothing untoward occurred in the course of it. The stone, which was scarcely so large as a plum-stone, was very rough. After the operation was over, the child appeared to suffer remarkably little, and seemed to go on well till the afternoon of the following day, when pain and tenderness of the hypogastric region came on, for which leeches were applied, but without relief. The next day he appeared in great prostration. His skin was cool and flabby; he had considerable jactitation; his eyes appeared sunk; and his countenance clearly indicated approaching death, which took place at four P.M.

SECTIO CADAVERIS.—There were slight indications of union having already commenced in the lower part of the wound. There was increased vascularity, and some effusion, of a semi-concrete puriform appearance, in the pubic and inguinal regions, feebly gluing together the contiguous peritoneal surfaces in the immediate vicinity of the bladder, and more especially at its sides. The cellular membrane subjacent to the peritoneum, in the anterior part of the pubic region, was infiltrated with sanguineous but not puriform fluid, and retained its ordinary firmness: posteriorly, inferiorly, and laterally, it was softened, affording but little resistance to the passage of the finger, and was infiltrated with thin sanious sero-purulent fluid. The tender lacerable state of the cellular membrane extended along both sides of the spine in the course of the ureters, to within an inch and a half of the kidneys; but the puriform effusion was here more concrete, and untinged with blood. No appearance of peritoneal inflammation, except in the situation before described. There was a little redness of the mucous membrane of the bladder. Kidneys were healthy. The other viscera were quite healthy.

There is every reason to believe, from the appearances at the examination after death, that the urine had made its way into the cavity of the pelvis, and probably in consequence of too free an incision through the prostate gland, so as to have wounded the pelvic fascia. To avoid this, a narrower knife should be used for a child than for an adult, and I have for many years adopted this plan.

CASE 22.

Lithotomy—Deep Perinæum—Difficulty in reaching the Bladder—Death.

THOMAS KENESLEY, aged 72: admitted into Luke Ward, No. 4, on October 30, 1839: by trade a turner: a married man, with four children, of temperate habits, and good constitution. States that five years since he for the first time felt a difficulty in passing his urine. The inconvenience of this, however, was not so great as to induce him to seek surgical relief, until a twelvemonth back, when, on being sounded, a calculus was discovered in his bladder. Since this period

he has been suffering constant pain along the urethra and course of the ureters, depriving him of rest at night, and increased by exertion of any kind. He makes frequent attempts to pass his water, and can only void it when in the semiflexed position, and then in an interrupted small stream. Mr. Cooper examined him at his own house, felt the stone, and, on the man's earnest desire to have it removed at any risk, advised him to enter the hospital. Excepting this complaint, and a stiffness of the right knee-joint, apparently depending on the presence of some loose cartilage, he appears to be in sound health.

Nov. 11. Has been sounded by Messrs. Callaway and Cock : the presence of calculus very distinct. Ordered, *ol. ricini* ʒij.

12. 7 A.M. Injection of *ol. ricini*. At 1 o'clock P.M. operation of lithotomy performed. Position secured by usual means, but with some little difficulty, on account of the stiffness of his joint. On attempting to pass the straight staff, the depth of the perinæum, and the constriction of the parts, owing to their forced position, prevented its admission : a curved staff was therefore substituted. A little hæmorrhage followed its insertion, apparently from the mucous membrane of the urethra. The perinæum and pelvis were successively laid open, without difficulty or bleeding. On trying to pass the apex of the forefinger into the bladder, the perinæum was found to be so deep as not to allow its reaching even the prostate. An attempt was now made to introduce the forceps by the direction of the staff, which had not been removed ; but owing to obstruction, which it was not thought prudent to force, it failed. A blunt gorget, of sufficient length, was now used, and the forceps were passed along it into the bladder. The stone was grasped, but unfortunately at right angles to its long axis : attempts were made gradually to withdraw the stone : however, the prostate gland was drawn forward at the same time. Mr. Cooper, holding in his left hand the forceps, made with his right a further division of the gland, by means of a long scalpel. Efforts were now again made to remove the stone, which entered the prostate, and was there held fast. On further division of the prostate, the stone was removed.

The space of time occupied by the actual operation was

eighteen minutes. Patient, on the whole, bore it well; but towards the latter part of it, his countenance changed, becoming pale and very anxious. The hæmorrhage altogether not more than usual. After being put to bed, he was ordered opii gr. iij. st. Warm poultice over the abdomen.

During the afternoon he had some comfortable rest. He took some gruel, but it was rejected from the stomach.

10 P.M. Awakened by great pain in the calf of right leg, apparently depending upon the knee, and its forced position during the operation. Relieved by hot poppy-fomentations.

Nov. 13. 9 A.M. Has passed a comfortable night: urine has come freely through the wound: no hæmorrhage: skin moist: tongue clean and moist: no tenderness about the abdomen: pulse 108, compressible: dozing: feels comfortable, but expresses much anxiety about his recovery.

3 P.M. Cannot retain any thing on his stomach: tongue not so moist: pulse more feeble: very anxious, but not complaining of pain. Ordered ammonia and serpentary.

5½ P.M. Pulse more rapid and feeble: complains of pain in the course of the ureters.

9 P.M. Pulse 140; very feeble: great depression of countenance: constantly moaning: tongue quite dry, and furred: unconscious: sinking fast.

14. 4½ A.M. Died.

POST-MORTEM EXAMINATION.—The surface of the body presented marked signs of decomposition, which had proceeded at an unusually rapid rate, all the most depending parts of the body being purple from sanguineous infiltration. The same condition was evident in the feet, more especially in the right, which was nearly of an uniform dark colour, resembling the latter stages of gangrene. All these external signs indicated a previous low state of vitality, the solids offering, after death, a very slight resistance to the transudation of the fluids. A thick layer of fat, at least an inch in thickness, covered the anterior abdominal and thoracic parietes. Upon opening the abdomen, some old membranous adhesions between the abdomen and the abdominal parietes; the colon was distended throughout its whole length with gas; the stomach was projecting from the same cause; but

the small intestines free. There was no evidence of recent inflammation in any part of the peritoneum, and no redness excepting from the gravitation of fluids at the more depending portions of each curve of the small intestines. The liver was pale, small, and very flabby; its structure very easily yielding to pressure. The capsule of the spleen opaque and thickened; the internal structure pulpy and grumous, from commencing decomposition. The pancreas, stomach, small and large intestines, offered nothing worthy of remark, excepting the distention before alluded to, until we arrived at the rectum, which was extremely dilated, its walls thin, and exhibiting a general condition of venous congestion, more especially marked near the verge of the anus, forming at that part a fringe of small piles. The walls of the rectum were perfectly entire, both externally and internally. The kidneys were of the ordinary size, and surrounded by a large quantity of fat, very flabby, exsanguine, and the cortical portions were slightly diseased. Ureters were both dilated to twice their natural size, containing urine slightly coagulable upon the application of heat.

The bladder, enveloped in fat, was dilated so as to reach a little above the pubes: upon separating it therefrom, the cellular membrane was found somewhat infiltrated with serum exuding from the surrounding parts, and mixed with the oily particles of fat. No communication whatever existed between the upper part of the neck of the bladder and the wound in the perinæum. The walls of the bladder were scarcely thickened: the mucous membrane seemed reddened at a few points, from recent inflammation; and at other points there were portions ulcerated away, the thickened edges shewing them to be long antecedent to the operation. Neither mucus nor urine were found in the bladder; a considerable quantity of the latter having flowed through the opening in the perinæum at an early part of the examination. The internal aspect of the neck of the bladder was much congested, and a portion of the prostate gland projected into the bladder opposite the commencement of the urethra. The opening into the bladder, made at the operation, was oblique towards the left side, about an inch in length; and two sections of the prostate had been made, having a small

portion of the gland between them. The prostate was not much enlarged: no false passage had been made at any part of the circumference of the bladder, the integrity of the cellular membrane remaining perfect, and free from any infiltration of urine. The surface of the wound, in and through the perinæum, was dark, soft, and disposed to slough. A curious pouch existed behind and below the prostate gland, capable of holding, and its shape adapted to, a large chesnut: this pouch extended from behind forwards toward the prostate; its roof formed by the muscular band running between the openings of the ureters and the mucous membrane of the bladder, upon the plane of the urethral aperture. Nothing importantly abnormal was discovered in the chest.

This patient never appeared to rally from the shock of the operation: and the diseased state of the kidneys and liver seems to be a sufficient reason for the prostration which so quickly followed it. A fatty condition of the liver may perhaps be considered nearly as unfavourable to the recovery of a patient after an operation, as disease of the kidneys themselves: and unfortunately it is extremely difficult, if not impossible, to judge if the degree of disorganization which it has undergone is sufficient to preclude the propriety of submitting the patient to lithotomy.

CASE 23.

Case of Lithotomy with unusual difficulties—Peritonitis— Death—Post-mortem Appearances.

STEPHEN POLLARD, aged 53: of a plethoric habit, but portraying want of constitutional power: admitted into Job's Ward on March 7, 1828. He states that he has been subject to a gravelly deposit in his urine for seven years; and a twelve-month after its first appearance he was attacked with excruciating pain in the region of the right kidney, which was constant and severe, and confined him to his bed for three months, at the end of which time he voided a stone with his urine, about the size of a barley-corn. Subsequent to this his health became re-established, suffering but a slight inconvenience from the sediment in his urine, which remained unaltered. In three years, a second attack, similar to the first, took place on the opposite or left side: the same

symptoms supervened; and at the end of a fortnight he voided another calculus, of nearly equal size with the first. He soon recovered his health; and the gravelly sediment, though continuing, has latterly been much diminished in quantity. About a twelvemonth ago, unusual irritation in his bladder attracted his notice, which rapidly increased, causing difficulty in micturition, the urine suddenly stopping, and the complete evacuation of the bladder inducing intense suffering. At length he was obliged to apply to a surgeon, who advised his coming to Guy's Hospital. Upon his admission, he stated that his journey to town, from Sussex, in a rough cart, gave him great uneasiness, producing repeated inclinations to void his urine. Walking also increases the symptoms. The pain is most considerable when the bladder is empty. He has never passed bloody urine. The sound being introduced indicated the presence of a hard calculus. His general health not much impaired; but suffering from a slight catarrh, from exposure during his journey to London.

The operation was performed on Tuesday, March 18. The sound being introduced, the calculus was felt with difficulty, and then only while withdrawing the instrument. The narrowness of the perinæum excited attention. The straight staff being introduced, the external incision was purposely extended beyond the usual length, to compensate for the natural deformity. The groove of the staff was cut into, and the knife readily passed into the bladder, as indicated by the flow of a small quantity of urine. On passing the finger into the wound, the extent of the section of the prostate could not be ascertained, in consequence of the depth of the perinæum; and by introducing the forceps, the stone could not be felt. Mr. Cooper, therefore, was induced to enlarge the opening through the prostate, by means of Sir Astley Cooper's beaked knife. The straight staff was then withdrawn, and a curved one passed into the bladder, by which the stone was detected in the concavity of the curve. To secure the passage into the bladder, the cutting gorget (which was necessarily furnished with a beak) was passed, and used as a guide to the introduction of the forceps: but still, though the forceps passed readily into the bladder, as was experienced by Mr. Callaway as well

as the operator, the stone eluded detection. A female staff was then introduced, but could not be brought in contact with the stone. A male sound was next passed through the wound into the bladder, and, with some difficulty, detected the stone, *above* the prostate, and consequently *behind* the pubes; and at length the blades of the forceps (the handles being directed downwards and backwards) were brought in contact with the calculus, which, immediately on being felt, was extracted without any force; although, from the circumstances above detailed, the operation had unavoidably been tedious, occupying about forty minutes. When he was placed in bed, he felt depressed and exhausted: forty drops of laudanum were given him; which produced slight composure, but no sleep.

5 P.M. Complains of very acute pain in the lower part of the abdomen, especially in the left iliac region; this increases on pressure. No tension of the abdomen is discernible. Apply thirty leeches, and hot fomentations.

10 P.M. The pulse has increased in number to 116, and is tremulous: pain in abdomen unrelieved by the leeches: breathing hurried: skin bedewed with a clammy perspiration: countenance natural. Answers questions with great composure.

Hyd. Chlor. gr. iij. Opii gr. ij. st.—Poultice over abdomen.

March 19, 1 A.M. Has not had any sleep. Tenderness of abdomen undiminished; pulse 120, small, with a degree of hardness. For the last half hour has had nausea, and inefficient efforts to vomit, which greatly distress him by increasing the pain.—Repet. cal. et op.

5 A.M. The pain in the abdomen is increased: pulse 120, small, and hard: respiration difficult: nausea unabated.—V. S. ad $\frac{3}{4}$ x. This relieved the urgency of his symptoms, but was followed with depression.

Hyd. Subm. gr. iij. Opii Extract. gr. i. stat.

Continue the Cataplasma.

10 A.M. Pain in abdomen continues: pulse as quick as in last report: tongue covered with a white fur, but moist: nausea still present, even rather more urgent.—A sinapism ordered to be applied to the pit of the stomach, and thirty

leeches to the abdomen. These gave immediate relief, to such an extent as to enable him to sleep.

1 P.M. Pulse 156, and irregular as to power, but constant in number. The anxiety of countenance indicates a fatal depression, and has a peculiar yellow hue, the lips being pale. The nausea has returned; and the pain of the abdomen is only complained of during the spasm. The respiration is short, hurried, and attended with pain.

Ammon. Carb. gr. iv. Tinct. Opii. m. xxiv. Inf. Serpent. ʒiſs.
st. sumend.

After having taken this draught he slept two hours, when the respiration was 26 in a minute. He awoke in an alarming state of depression; the countenance anxious and pallid: he reluctantly answered questions; but said he was entirely free from pain. He took a small quantity of brandy and water, with the julep of ammonia; but continued gradually sinking until half past seven, when he died.

It may be worthy of remark, that this patient felt convinced in his own mind that the operation would prove fatal: and so strong was this impression, that he persuaded two patients in the same ward to shew him the burial-ground of the hospital. He visited this, and expressed his conviction that it would be his resting-place.

EXAMINATION OF THE BODY, SIXTY HOURS AFTER DEATH.

From the Notes of Dr. HODEKIN.

The peritoneum at the lower part of the abdomen, as well as that portion which lines the parietes, and that covering the intestines, was minutely injected. In the pelvis there was some sero-sanguineous effusion, very slightly puriform, and unmixed with lymph or flocculi. Behind the peritoneum, in the posterior part of the left iliac region, there was some ecchymosis. The cellular membrane behind the peritoneum, in the pelvis, was extremely lacerable, readily breaking down under the finger, and scarcely requiring the use of the knife for removal, except under the pubes. There was a free division of the prostate, and a clean cut into the bladder, the mucous membrane of which was generally healthy. Immediately behind the meatus urinarius there was a small

tongue-shaped body, which, on the opening of the bladder, and when obscured by coagula, was considered to be the third lobe of the prostate; but a more careful examination proved it to be a small flap, composed of a portion of bladder and prostate, and which had been formed by another incision, communicating with the first, about an inch in length, and a third of an inch behind the opening of the meatus. There were a few spots of the ecchymosis and abrasion, comprehended in a space of about the size of a shilling, around the orifice of the meatus. The edges of the incision, from the external opening to the bladder, were ragged, and intermixed with adherent coagula of blood; a state which was unavoidably produced by the repeated introduction of the forceps, and other instruments which were had recourse to in the attempt to remove the stone.

In the preparation, a passage exists at the side of the bladder: this was not noticed by Dr. Hodgkin till after it had been in the hands of the reporter of the *Lancet*: and from the extremely lacerable state of the part, it might easily have been formed after its removal from the body. That it was either formed then, or in the act of removing them, is an idea which the absence of coagula tends strongly to confirm.

Besides the injection of the peritoneal coat of the small intestines, the internal membrane was of a diffused red colour. The rectum was perfectly sound and healthy, with the exception of a very slight appearance of piles. The kidneys were of moderate size, soft, and flabby, and in an advanced stage of the light mottling deposit described by Dr. Bright.

This case resembles all those of unsuccessful lithotomy which I have myself had an opportunity of examining, both in the peritoneal inflammation, and in the extensively lacerable state of the cellular membrane behind the peritoneum: similar results have, I believe, invariably been found by Mr. C. A. Key in this country, and by my friend Harvey de Chegoin in Paris.

The peculiar derangement of the kidney observed in this case was likewise met with in a patient of Mr. C. A. Key's, who died after an operation for the stone; and has likewise been found in others who have sunk after operation or accident.

Preparation of Calculus, No. 2127. Lithic-acid calculus, weighing 3ij.

This case has already been sufficiently the subject of public notoriety to require no further comments beyond those already made. It is my opinion, that, had I again to operate under similar circumstances, I should experience all the difficulties I had then to encounter, and which, to the best of my judgment, were not to be obviated. In fact, the completion of the fourth step of the operation for the stone, namely, of extracting it from the bladder, is by far the most uncertain part of the operation; for the obstacles to its removal are hidden from the operator, and are sometimes insuperable: indeed, many cases are on record, in which the surgeon has been obliged to leave the stone in the bladder, not being able to complete his operation, although the incision into the viscus, and every other step, had been perfectly performed. I do not know the cause of the difficulty in this case; and can neither therefore describe, or tell how to obviate it, in future similar cases.

CASE 2A.

Operation for the Extraction of a Piece of Bougie from the Bladder—Death.

JOHN PERRING, aged 44: a sailor, of healthy appearance: was admitted into Luke Ward, July 8, 1829, for the purpose of having a portion of bougie extracted from his bladder. About three months ago he came into the hospital, in consequence of a piece of bougie, which he was in the habit of passing, having become detached, and remaining behind. Several attempts were made at that time to extract it, with forceps passed into the bladder through the urethra, but without avail. A week previous to his last admission the forceps were again tried; and on withdrawing them, a quantity of earthy matter adhered to the blades, but the bougie could not be extracted: it was therefore thought advisable to have it removed by performing the operation as for lithotomy. This was done on the 14th, in the usual manner, by Mr. Cooper. The straight staff was used; and it was necessary to employ the scoop, and two or three varieties of forceps, on account of the awkward situation of the bougie in the bladder, and the

friability and extreme softness of the earthy deposit which adhered to it. The patient bore the operation remarkably well, appearing to suffer less than is usual in such cases. About an hour afterwards he was visited, and found to be easy and comfortable. In the evening, also, the symptoms were favourable: he was warm with perspiration, and free from thirst.

July 15. Makes no complaint: pulse natural: skin perspiring: tongue coated with a dirty-white fur: no thirst: slept well last night.

16. Morning—Quite as well as yesterday: no pain, excepting when the water passes through the wound: pulse natural: skin covered with profuse perspiration: no thirst: slept soundly. Evening—Quite cheerful: bowels not being opened, ordered castor-oil.

17. Morning—Passed a very good night. At 7 o'clock had a slight shivering, and afterwards heat and perspiration. The wound directed to be fomented. Evening, 8 o'clock—Had another attack of fever, the cold stage being more severe than that of the morning: pulse quick, and soft: ordered, *gtt. 25 tinct. opii*, to be taken directly; and to continue the medicine composed of effervescing mixture, camphor julep, and black-drop, which was prescribed for him to allay a frequent hiccup that had made its appearance. The bowels have been well purged by the castor-oil.

18. Morning—Has passed a comfortable night; but at 7 o'clock the rigors returned, and subsequently the heat and perspiration: pulse soft and regular, not very frequent: hiccup still troublesome: no pain of the abdomen on pressure. At 12 o'clock, Mr. Callaway visited him, and drew off the water through the wound in the perinæum: he also removed two small pieces of calculous deposition, directed a mustard-poultice to be applied to the pit of the stomach, and a grain of calomel and opium *6tis horis*. Evening, 9 o'clock—Hiccup continues unabated: no pain of the abdomen: pulse regular, not frequent: countenance not expressive of much anxiety: has had a slight vomiting of bilious matter. To discontinue the last medicine, and to take

Tinct. Opii m xv. c̄ Mist. Salin. ʒfs. 2da hora.

Emp. Lyttæ amp. scrob. cord.

July 19, 10 o'clock A.M. In the early part of the night was very restless, and greatly disturbed by the hiccup, until two o'clock in the morning. From this time, until four o'clock, he slept well, the diaphragm acting convulsively, but without disturbing him: this, however, now became so violent, as to prevent him from enjoying the slightest repose; but he did not complain of pain in the abdomen: pulse 120, soft: tongue more coated, and dry: and around the lips and teeth was collected a quantity of dark sordes: countenance indicating distress. At four o'clock he was very low; and mustard-poultices were then applied to his feet. At eight o'clock the extremities were warm; but the pulse intermitting; the hiccup had ceased: he was sensible when roused, or when spoken to; but at intervals had been delirious. At ten o'clock he died.

POST-MORTEM APPEARANCES.—The kidneys were the only organs importantly diseased: they were very soft, of a lobulated and granulated texture, and presented a mottled aspect, when deprived of their investing membrane; the internal surface very pale. The bladder was removed from the pelvis, and very carefully examined: on raising it up, previous to separating it from the pelvis, Dr. Hodgkin observed a small quantity of pus in the wound: the incision through the prostate, into the bladder, was as fairly made as possibly could be desired: there was not the slightest attempt at reparation, either in the bladder or the external wound of the perinæum. A quantity of lymph was observed between the inferior surface of the lungs and diaphragm: the lungs were healthy: liver slightly inflamed.

The diseased state of the kidneys may be considered as the cause of this patient's death: in fact, there can be no doubt that the urine of this patient would have been found to contain albumen, which ought invariably to deter the surgeon from such an operation, until the constitution of the patient is improved by the administration of appropriate remedies; and even then, if admissible, lithotripsy should be preferred to lithotomy.

Prep. 2147⁸⁰. Bougie, coated with calculous matter, apparently the phosphates, removed from the bladder.

CASE 25.

Calculus Vesicæ—Diseased Kidneys and Liver—Operation—Death.

GEORGE WILLIS, aged 48: admitted on 8th of May 1829, into Luke's Ward, under the care of Mr. Bransby B. Cooper. He was taken into the hospital, affected with stone. He had laboured under disease of the urinary organs for about eighteen years; and had been a patient before for stricture. His sufferings were very great: the urine which he passed was offensive and purulent: it had, for a long time, been charged with calculous matter, resembling chalk in powder. The general state of the patient's health, and the diseased condition of the bladder, rendered him an extremely unfavourable subject for operation; which was only performed at the urgent request of the patient, who was fully apprized of the risk attending it. Although a stone was detected on sounding the man soon after his admission, yet on several succeeding occasions he was sounded by the surgeons of the hospital and no stone felt; but they at length agreed to its presence. The operation was performed on the 14th of July. For several days he appeared to be doing well, and suffered less than he had done previously to the operation. Although no symptoms of peritoneal inflammation came on, and the wound presented nothing remarkable, he sunk, and died on the 21st, having been sometime much annoyed by hiccough.

INSPECTION—made in the presence of Mr. Cock, at the patient's house:—

The body was universally of a yellow-jaundiced colour. The face was thin, but the muscles generally were well developed; and the subcutaneous fat, about the trunk, pretty abundant.

In the abdomen there was no effusion, nor any other indication of peritoneal inflammation; and though the tissues were generally rather soft and tender, there was none of the preternatural lacerability of the subserous cellular membrane so generally met with after the operation for stone; nor was there any purulent or sanguinolent infiltration of that structure. Liver generally of a light colour, and mottled on the surface: it appeared to contain a good deal of bile, and was rather soft. The gall-bladder was distended with dark and

viscid bile. Kidneys were rather large, soft, and easily lacerated: there were two or three urinous cysts on the left, the substance thereof unusually pale. Ureters were less than the ordinary size. Bladder of moderate size, flaccid and sacculated: it contained two small concretions of soft calculous matter, near the fundus. The prostate was not enlarged; and there was a clean good cut through it, into the bladder.

This case is interesting, inasmuch as the operation was performed at the anxious request of the patient. He never rallied after the operation, as if incapable of any restorative action. Lithotrity would, perhaps, have afforded a better chance for the patient; but the narrowness of the urethra, from an old permanent stricture, would probably have prevented the employment of the lithotrite.

CASE 26.

Calculus Vesicæ—Operation—Peritonitis, &c.—Death.

JOHN BARTLETT, aged 22: admitted into Naaman Ward, under Mr. Cooper, on August 20, 1837: a stout, but unhealthy-looking man, with light hair and eyes: by trade a shoemaker, living in London. States that he has generally had good health, but injured his loins severely seven years ago; three years after which, without any apparent cause, he experienced pain in the loins and in the perinæum during and after micturition, sometimes passing bloody urine, and having shooting pains down the thighs. He took some medicine, but without relief. About two years and a half ago he was sounded by Mr. Meadows, who said he had stone, and endeavoured to dilate the urethra for the purpose of lithotrity; but the great pain and irritation caused by it obliged him to desist at intervals. During the last month he has had severe pains about the bladder on moving; frequent and sudden stoppages while micturating; urine in very small quantities, sometimes bloody, and passed frequently: no tenderness on pressure about the region of the bladder.

Aug. 21. Urine of natural colour, and slightly alkaline. He was sounded, but no stone could be felt: it caused exquisite pain. Ordered,

Acid. Hydrochlor. m ij. Syrup. Aurant. ʒi. Inf. Gent. C. ʒiſs.
t d. sumend.

Pulv. Dov. gr. iij. Pil. Hydrarg. gr. ij. o. n.

28. Passes urine about eight times a-day : pain not diminished : slight mucous deposit in the urine : appears languid ; and has bad appetite.

Liq. Potass. ʒſs. Tinct. Hyosc. m xx. Mist. Mucil. t d.

Sept. 15. No changes. An elastic catheter passed ; but was obliged to be removed, owing to the extreme pain it occasioned. Ordered,

Inf. Pareir. c̄ Tinct. Hyosc. m xx. t d.

Pil. Ant. c̄ Opio fort. o. n.

Empl. Lyttæ sacro.

Pil. Sapon. c̄ Opio gr. xv. pro suppositoio, bis die utend.

29. Mr. Cooper again sounded him, and discovered a stone.

Oct. 9. The lateral operation was performed by Mr. Cooper ; and a flattened stone, about the size of a date, was removed without any difficulty. Immediately ordered,

Liq. Opii. Sedat. m xl.

3 P.M. He has been in excessive pain since the operation, and has shivering and sickness. He appears much depressed, and complains of a feeling of weight about the bladder. Pulse 120, small : extremities cool.

8 P.M. Has had no sleep. Only a small quantity of bloody urine has passed through the wound. Pulse 120, rather full, and compressible. A female catheter was passed through the wound, and about half-a-pint of bloody urine withdrawn, during which the pain was very severe. No tenderness over the pubes.

Cal. gr. ij. Opii gr. ij. h. s.

10. Peritonitis afterwards supervened ; under which the patient sunk, on the 14th of October.

POST-MORTEM EXAMINATION.—On examination of the body, diffused inflammation of the peritonitis was found implicating that membrane where it covers the liver, stomach, and diaphragm ; accounting, in some measure, for his continued sickness, and constant hiccough. Lungs congested : left kidney nearly gone : the pelvis and infundibula much dilated :

right kidney very large, and mottled: spleen large, and soft: bladder much less diseased than was expected: it was slightly ecchymosed at the posterior part, and inflamed at its base.

CASE 27.

Calculus Vesicæ—Operation—Friable Stone—Death.

EDWARD PRICE, aged 30: was admitted, January 17, 1827, into Lazarus Ward, labouring under symptoms of stone in the bladder, with which he has been affected eighteen years; and has, from the urgency of the symptoms, been prevented following any kind of employment. He has obstinately refused to submit to operation up to the present time; but from his late great increase of suffering is induced at last to seek the removal of the cause of misery: he has not been able for for the last six weeks to retain his urine.

The operation was attended with considerable difficulty, in consequence of the size and friability of one of the calculi found in the bladder, being as large as a small egg, and lamellated, so that it broke into several portions, requiring the frequent introduction of the forceps. Besides this large stone, there was a smaller one; the surface of which did not present any smoothness, indicative of attrition. The patient died on the third day after the operation, unable to sustain, from his broken-down constitution, the shock of the operation; which would not have been recommended, but was consented to in consequence of the urgent solicitation of the patient—anxious to risk his life, rather than longer to bear his excruciating suffering.

The inspection of the body was made at the house of his friends, by Dr. Hodgkin and Mr. Roots. The abdomen only was opened. There was considerable peritoneal inflammation, especially in the lower part of the abdomen, which was bathed with a brownish puriform fluid: the cellular membrane, subjacent to the peritoneum in this part of the abdomen, but especially about the anterior and lateral parts of the bladder, was very soft and lacerable, and besprinkled with numerous points, in which suppuration was commencing: the parietes of the bladder were from a quarter to half an inch in thickness: the mucous membrane thickened, and granular,

of a livid and dusky red colour, with a considerable quantity of adherent coagulable lymph: there was a small ulcerated opening through the muscular coat, about the middle of the bladder: it merely led to the subserous cellular membrane, and was irregular, with a purulent surface. The ureters were tortuous, and as large as the finger: the pelves of the kidneys were greatly dilated; they contained numerous large cysts: this was more particularly the case with the left, of whose glandular part very little remained. The mucous membrane of the stomach and duodenum was much thickened.

Could all these morbid changes have been detected, scarcely the earnest desire of the patient to risk the operation would have justified its being performed.

REPORT OF CASES
OF
STRICTURE OF THE URETHRA,
RETENTION, AND EXTRAVASATION,

TREATED IN GUY'S HOSPITAL FROM OCT. 1842 TO OCT. 1843.

(Continued from No. II. p. 562.)

CASE 42.

Stricture—Relieved.

GEORGE SINCLAIR, aged 38: admitted into Cornelius Ward, on November 3, 1842, under Mr. Morgan. Has led the usual irregular life of a sailor: has had the venereal disease several times, and various fevers in different parts of the world. His last gonorrhœa was two years ago, ever since which he appears to have had confirmed stricture. The symptoms and urinary difficulty had been increasing until the time of his admission, when he voided his urine in a small stream. After several attempts, a catheter was passed.

Nov. 20. The canal now admits a moderate-sized catheter without difficulty, and he passes his water with ease. Complains greatly of giddiness.

25. Giddiness relieved. The catheter was yesterday passed, with great pain and bleeding.

Left the hospital on November 28th.

CASE 43.

Stricture—Perinæal Abscess—Relieved.

JAMES REES, aged 39: admitted into Naaman Ward, on November 9, 1842, under Mr. Cooper: a blacksmith; unmarried, and moderately temperate. Has had gonorrhœa several times; the last, about two years ago, for which he took large quantities of copaiba, but never used injections. Appears to have had a gleet, and a gradually increasing stricture for the last five years. For several weeks he has had all the severe symptoms of permanent stricture. On the 2d inst., after a long walk, his perinæum began to swell; and a urinary abscess appears to have gradually formed, attended with rigors and

great pain. The abscess had commenced opposite the bulb, and extended forwards behind the scrotum.

Nov. 10. Abscess opened, and the matter evacuated.—Ordered,
Julep. Ammon. Acet. with Magn. Sulph. and Antimony, t. ij.
Calom. gr. iij. Opii gr. i. statim.

The catheter could not be passed.

11. Altogether better: passes his water in a better stream: no urine whatever passes through the perineal opening.

25. Is better, and voids his urine more freely. No instrument has yet been passed into his bladder.

28. A catheter was introduced.

Dec. 6. The abscess in the perinæum has healed, and he passes his water much more freely. Has urethral discharge, and pain in the loins.

20. Left the hospital, free from symptoms.

CASE 44.

*Stricture—Retention—Local and Constitutional Symptoms—
Death—Post-mortem appearances.*

JAMES PERRY, aged 29: admitted into Cornelius Ward on November 11, 1842, at 12 o'clock A.M.: a healthy labourer: has been in the habit of drinking a good deal of beer, but has lived steadily. Three years ago contracted a gonorrhœa: used no injections; but ever since has had increased difficulty in passing his water. Two years back had temporary retention, and was relieved without the catheter. Latterly he has passed his water in a very small stream, with all the common symptoms of permanent stricture. On the evening of the 9th inst. he had been drinking beer. He has passed no water since the morning of the 10th, and then only in a small quantity. Continued attempts had been made to introduce a catheter: he had been in the warm-bath, had had medicines, and belladonna to the urethra, &c.

On admission, there was great distention of the bladder; and much pain and distress. Mr. Cock ordered him opii gr. ij. cal. gr. iij. statim; and, after some difficulty, succeeded in introducing No. 1 catheter into his bladder, thereby drawing off his water. The catheter was left in, and was retained about six hours.

Nov. 11, 9 P.M. Had slept comfortably: is quite free from pain or uneasiness; and since the removal of the catheter, has passed his water in a freer stream than he had done for many months.—

Hirudines xv. perinæo.

12. Had retention again in the night, attended with rigors. The dresser passed a catheter with considerable difficulty. Had then two

grains of opium. Is thirsty and irritable: the catheter is still in. Ordered,

Warm-bath.

Julep. Potass. Citrat. Spir. Æth. Nit. m xx. Liq. Potass.

Tinct. Hyosc. āā m xx. Mist. Acac. ʒi. 4tis horis.

Pil. Ant. Op. f. i. o. n.

Nov. 13. Is somewhat under the influence of the opium, and is feverish. Can pass his water, but with some difficulty; and there does not seem to be any accumulation. Urine high-coloured and turbid.—To omit the pill, and foment the pubes.

15. Has been suffering from considerable fever, but is now better: urine more copious, is passed feebly, but without difficulty: is labouring under prostatic and vesical inflammation and irritation.

17. Great constitutional fever, with dry tongue and extreme restlessness: micturition painful: tumefaction and tenderness in the perinæum and left side of the anus. On passing a catheter down to the stricture, a quantity of ill-conditioned pus was discharged from the urethra.—Mr. Cock made an incision into the side of the nates, and evacuated a small quantity of pus.

18. No relief: was delirious last night, and his constitutional disturbance excessive. There is extreme pain about the perinæum, bulb, and anus, when he passes his water: a dark, sanious, sloughy discharge can be squeezed from the urethra: there is a fulness and tenderness in the perinæum. Mr. Cock made a free incision into the region of the bulb: no pus or discharge of any kind ensued; but the cellular tissue was generally unhealthy, and infiltrated with dark serum. The next time he passed his water, it came freely through the incision, without pain, and with great relief.—Ordered,

Tinct. Opii ʒfa. ex Julep. Ammon. h. s.

19.* Passed a good night, and made water through the wound. Is very low, but free from pain. Bowels confined, and distended with flatus.—Ordered,

Castor-oil.—Spir. Ammon. C. Sp. Æth. Sulph. C. āā ʒfa. ex Decoct. Cinch. t. d.—Wine.

In the course of the day, his belly became rapidly tympanitic: he was seized with excessive pain about the scrobiculus cordis and lower part of the chest, distressing dyspnœa, and died at 6 o'clock P.M.

A catheter was introduced about an hour before his death, but his bladder only contained a few ounces of urine. For the last four days his tongue had been dry and dark brown; and he had every indication of some internal abscess or suppuration about the cellular tissue of the pelvis.

SECTIO CADAVERIS, November 21st.—The vessels of the brain were congested, and part of its substance had a roseate hue. The lining membrane of the larynx and trachea was vascular; and within the larynx were some portions of pulpy matter, chiefly occupying the fossa of one of the sacculi. They appeared to be a portion of the contents of the stomach, and had probably been introduced into the larynx during the act of vomiting, immediately previous to death.

Chest.—The margin of the base of the right lung and corresponding parietal pleura were covered with plastic lymph, evidently the result of most recent pleuritis. The same appearances were found on the base and posterior margin of the left lung and corresponding pleura.

Abdomen.—The small intestines and the stomach distended with flatus, and the large intestines contained a moderate quantity of feculent matter. The recto-vesical peritoneal pouch contained some dirty, turbid, serous effusion. The right kidney was large, and tolerably healthy; the left was also large, and the interstitial texture occupied with albuminous deposit: it appeared to be in a state of acute inflammation, and contained two or three deposits of pus. The cellular membrane about the perinæum and pubes was infiltrated with dirty-coloured serum; and the scrotum was somewhat distended. The whole of the cellular texture connecting the bladder with the deeper-seated pelvic parts was infiltrated with dirty effusion: the tissue was rapidly giving way about the base of the bladder and prostate, and passing into a semi-sloughy suppurating state.

On slitting up the urethra, the canal presented a contraction about two or three lines in extent. In several parts anterior to the stricture, existed the openings of various false passages, most of them terminating in blind extremities in the cellular tissue outside the canal. One of these passages left the canal close to the stricture, and entered it immediately beyond the stricture: another false passage was continued the whole way down outside the canal, and entered the bladder by piercing the prostate. Just behind the stricture was a large ulcerated opening, communicating with the incision that had been made in the perinæum, and through which he had afterwards passed his water: one of the false passages led into this ulcerated opening. The bladder was large, and somewhat thickened: the openings of the ureters slightly dilated. The opening of the urethra into the bladder was surrounded by a layer of fibrin, the product of recent inflammation. There were a few superficial abscesses in the prostate.

CASE 45.

Stricture—Testitis—Cured.

WILLIAM ADAMS, aged 30: admitted into Billet Ward, on November 15, 1842, under Mr. Cock: a sailor: married two years. Arrived

yesterday from Calcutta, having been absent sixteen months. Is tolerably steady and temperate. Had gonorrhœa, the last time, seven years ago, and got well without untoward consequences. Three years ago had a fall, and appears to have injured the right testis and also the urethra; as the accident was immediately followed by acute testitis and retention, which latter lasted thirty-six hours: no catheter could be passed, but he was relieved by other means. Ever since he has voided his urine in a small stream, and experienced the usual symptoms of stricture. Frequent attempts were made to pass a catheter, without success. For the last year and a half he has followed constantly his employment, without any other complaint but the stricture. Five weeks ago, when at sea, after severe exposure, was again attacked with testitis, with great enlargement of the gland, and pain up the cord and in right loin, with fever, &c. All these symptoms had in a great measure subsided previous to his admission; and he is now labouring under stricture, with turbid urine, containing copious lithates and lithic acid. Has a permanent stricture just anterior to the bulb, impermeable to a probe, and very irritable. The testis is somewhat enlarged and very tender.—Ordered,

Hirudines xv.

Julep. Pot. Citr. Liq. Potass. m xx. Sp. Æth. Nit. m xx.

Tinct. Hyosc. m xx. t. d.

Hyd. c̄ Cret. Pulv. Jacob. Ext. Hyosc. gr. iij. o. n.

Nov. 19. Considerable increase of pain and tenderness of the testicle, and along the cord: numbness of feet, generally after making water.—Ordered,

Dec. Sarz. c̄ Ext. Sarzæ. Pot. Iodid. gr. iij. Syrup. Papav. t. d.
Repet. Pil.

Not the smallest bougie could be introduced.

26. Testicle much smaller: all his pains have subsided. Mr. Cock succeeded in passing a small sound into his bladder; and then the smallest-sized elastic catheter, which was left in.

29. A larger catheter was introduced, and left in.

Dec. 9. Passes his water in a free stream, and the canal readily admits No. 5. Has left off the pills.—Ordered,

Diosma, Soda, and Hyoscyamus.

Left the hospital on December 13th, quite well.

CASE 46.

Stricture—Retention—Relieved.

WILLIAM SMITH, aged 37: admitted into Cornelius Ward on the morning of Nov. 28, 1842: a carter; and has drank very freely. Was married at the age of 24, but his wife has been dead six years.

Has had gonorrhœa three or four times, and also more or less urinary difficulty since he was 20. Has frequently had temporary retention, especially after drinking; but only once required medical aid, viz. last spring, when he was relieved from retention, by the catheter, in the London Hospital. The symptoms of stricture have gradually increased, and the stream of urine has become habitually small. The day previous to his admission he had been drinking a quantity of beer, and had passed no water for twelve hours. Mr. Cock, having previously ordered him a warm-bath, and opii gr. ij. calom. gr. iij., with some difficulty passed No. 1 catheter, and evacuated a quantity of water.

Nov. 29. Has passed his water in a better stream than he has done for some time. No. 2 was passed.

30. Ordered,

Mist. Mucil. Liq. Potass. m xx. ter die.

Leeches to the perinæum.

Dec. 3. Better: no intolerance. Mr. Cock passed a sound; and afterwards No. 3 elastic gum catheter, which was left in.

5. Catheter removed: passes his water in a full stream. Left the hospital on December 6.

11. Called on Mr. Cock; when No. 5 elastic catheter passed with great ease: had no symptoms whatever.

Feb. 12, 1843. Urinary difficulty has been increasing for the last few weeks, and he always has temporary retention after coitus. Had retention this morning, which was relieved by No. 5 elastic catheter.

March 12. Passes his water tolerably well. No. 5 catheter introduced.

CASE 47.

Stricture—Relieved—Re-admission—Peritonitis—Death—Post-mortem appearances.

JOHN ARSCOTT, aged 56: admitted into Philip Ward, on November 30, under Mr. Cooper: a tailor; married thirty years. Was in the hospital a year and a half ago for syphilis. Appears to have had difficult micturition for fourteen years, gradually coming on without any decided cause, excepting alternate exposure to heat and cold. For the last four months has been suffering with all the aggravated symptoms of permanent stricture, pain in loins, &c. The stricture is impermeable to instruments. Ordered,

C. C. lumbis ad 3xij.—Calomel, Dover's and James's Powders, every night.

Dec. 10. Is salivated by the powders: otherwise it appears that all his severe symptoms are much relieved; and within the last day

or two a small bougie has been passed through the stricture, and he passes his water in a better stream. The chief obstruction seems to be within two inches of the orifice of the urethra.—To omit the powders.

The next day No. 5 was passed into his bladder. He subsequently suffered much from prolonged bronchitis and pneumonia; but at length left the hospital, in February 1843, with his urinary organs in tolerable condition. The seat of obstruction was about two inches down the urethra; where the canal is still contracted, and surrounded by old induration.

He was re-admitted into Philip Ward, on September 27, 1843, under Mr. Key. Has been getting gradually worse since he left the hospital; and now has an indurated contraction about two inches down, which may be felt externally, and is impermeable to instruments.

Oct. 4. A small elastic catheter has been introduced, which he wears for some hours at a time.

14. A considerable, foetid abscess at the bulb was opened, from which he experienced much relief. Under wine, he continued to improve for a few days; but sunk when the stimulus was withdrawn. Symptoms of a low form of peritonitis came on, and he died on October 27.

SECTIO CADAVERIS.—Body wasted: chest healthy: general peritonitis. Liver coarse and pale. Spleen pale and fleshy. Left kidney much enlarged: its tunic hard, thickened, and adherent. Infundibula greatly dilated. The substance of kidney wasted and hard, with pus cells and softened spots: the pelvis thick and firm; its lining tumid, red, ecchymosed, ulcerated, and coated with fibrin and pus. Right kidney large, pale, and coarse, sprinkled with pus cells and points. Ureters wide, thick, hard, tortuous, and unequal. Red, foetid, watery secretion in the cellular tissue above the bladder: the same kind, but more purulent, about the base on the left side. Coats of the bladder three-quarters of an inch thick, hard, and pinkish: lining membrane dark. Prostate large, penetrated on one side by catheterism, and containing a dirty cavity. Urethra generally large, but slightly narrowed at the bulb; and presenting a narrow stricture, of about an inch in extent, just below the glans, where the walls of the stricture were thick, hard, pale, and coated with fibrin. The urethra communicated freely with the abscess, which had been opened in the perineum.

CASE 48.

Stricture—Retention—Diseased Bladder—Relieved.

HENRY LEWIS, aged 32: admitted into Philip Ward, on December 1, 1842, under Mr. Cooper: is a corn-meter, and accustomed to great

exertion. Married six years; and has three children, the youngest being four months old. Has been a remarkably strong, healthy man, temperate and steady. About ten years ago, after exposure to cold and great exertion, had retention for five hours, when it yielded without remedies; and about a year after had gonorrhœa for a short time, soon after which he believes that he began to pass his water in a diminished stream. For the last three years has had confirmed stricture, with all the usual symptoms and frequent temporary retention. He has had instruments occasionally passed, but none within the last two years and a half. For the last few weeks has been incapable of making any exertion, and has been gradually approaching to a state of total retention; his urine loaded with unhealthy mucus, and all the symptoms of unhealthy bladder present. On the evening of the 29th of November Mr. Cock was sent for to him, at Walworth: he had then had retention for two days, was exhausted with pain and straining, and in a state approaching delirium. No. 1 catheter was introduced, and a very large quantity of water was drawn off. From that time, until his admission, he was able to get rid of his water tolerably well, although with considerable pain and effort.

On the day of his admission Mr. Cooper introduced a No. 2 catheter, which was fixed in: his bladder did not contain much water. Ordered,

Pulv. Opii gr. i. Calom. gr. ij. Pulv. Jacob. gr. iij. st.
Mist. Salin. 6tis horis.

In the evening, warm water was injected into the bladder, and he was in every respect much relieved.

Dec. 2. The character of his water is improved: he does not appear to suffer from the presence of the instrument.

3. The catheter was removed to-day; and he left the hospital in the afternoon.

CASE 49.

Stricture—Retention—Relieved.

THOMAS ALEXANDER, aged 37: admitted into Philip Ward, on December 12, 1842, under Mr. Key: a stone-mason; a widower. Had an attack of pleurisy nine weeks ago, for which he lost a large quantity of blood. First had stricture eight years ago, when he was in the North-London Hospital, and was cured by the use of catheters: since then he has experienced no particular urinary difficulty, until three weeks ago, when he was unable to pass his water comfortably. On the 11th instant he went to the Reading Hospital: and as a catheter could not be introduced, he set off and walked to London. He had several rigors during his walk, and had passed little or no water for

the last forty-eight hours. On admission, he was suffering great irritation, perinæum excessively tender and much pain over the region of the bladder. He was placed in the warm-bath; a catheter was passed down to the stricture, and pressure made for a short time: it was then withdrawn, and was followed by half-a-pint of urine. Leeches were ordered to the perinæum, and fifteen grains of calomel and colocynth to be taken directly. His severe symptoms somewhat abated: he passed his water in small quantities, but in a very narrow stream. No further attempt was made to pass a catheter, as there continued to be a good deal of inflammation about the canal and perinæum: his bowels were kept open by castor-oil, and he had ten grains of Dover's powder at night. Wishing to have a catheter passed, and this not being complied with on account of the inflamed condition of the canal, he left the hospital of his own accord.

CASE 50.

Stricture—Cured.

JOHN DAVIDSON, aged 61: admitted into Billet Ward, on December 14, 1842, under Mr. Cock. Has led a very intemperate life. Had gonorrhœa twenty years ago; and for nearly the same period has experienced a gradually-increasing urinary difficulty. Had been always greatly addicted to sexual intercourse. Has now all the symptoms of aggravated permanent stricture; great difficulty of micturition, accompanied and followed by pain, occasional passage of blood, and intolerance. The canal is impermeable. He had had leeches, fomentations, and demulcents. A catheter was occasionally passed down to the stricture; and on Dec. 26, Mr. Cock introduced a small silver, and subsequently an elastic catheter, which was suffered to remain in for a few hours. The lower part of the canal and prostate were extremely irritable. Elastic catheters of larger size were successively introduced into the bladder, and allowed to remain as long as they could be borne.

He left the hospital on January 21, 1843; passing his water in an excellent stream, and with perfect ease.

On Feb. 3, Mr. Cock passed No. 6 into his bladder without any difficulty; and he is quite free from any untoward urinary symptom.

CASE 51.

Retention—Stricture—Relieved.

WILLIAM WADE, aged 53: admitted into Cornelius Ward, on Dec. 25, 1842, under Mr. Cooper: is a veterinary surgeon; healthy, and temperate. Has had stricture of the urethra for some years; but has only had one attack of retention before, namely, about two years ago. He was admitted at 6 o'clock P. M., suffering from retention, having passed

no water since 7 o'clock in the morning. A catheter could not be introduced. He was placed in the warm-bath, and the stricture not then yielding, two grains of opium were given; when, after some further difficulty, a No. 5 was introduced, and his urine drawn off with great relief. No. 3 was introduced on the 26th; after which his urine passed freely.

He was presented on the 27th, greatly relieved.

CASE 52.

Stricture—Retention—Relieved.

THOMAS ALDERSON, aged 33: admitted into Philip Ward, on Dec. 26, 1843, under Mr. Cooper: is a shoemaker; married five years. Has led a very intemperate, dissipated life, but less so for the last few years. Has had gonorrhœa four times; the last about a year ago, which continued six weeks: he took a great deal of copaiba, but used no injections. Has had gradually-increasing symptoms of stricture for nearly a year; and had retention six months ago, which was relieved by the catheter. On the evening of the 24th, after experiencing considerable difficulty in micturition all day, total retention came on. A catheter could not be passed; but he was partially relieved by medicines, and continued to pass some water in drops until his admission. He was then placed in the warm-bath, and had opium, after which No. 5 was passed; since which he has continued to make water in a tolerable stream.

Jan. 9. Passes his water in a good stream, and without difficulty. No catheter has since been passed.

13. No. 5 elastic catheter was introduced, and left in for several hours; and he left the hospital on January 18, well.

He visited Mr. Cock on January 21, when No. 6 passed without difficulty; and again on Feb. 1, when No. 8 was readily introduced.

CASE 53.

Retention of Urine from enlarged Prostate—Death—Post-mortem appearances.

WILLIAM SKEGGS, aged 75: admitted into Cornelius Ward, on Dec. 30, 1842, under Mr. Key: married fifty years, and has had ten children. Is a sailor, and has always lived very moderately. Has experienced difficulty in passing his water for the last four years, making it in a small stream, and unable to pass any until his bladder is very full: when not voided directly, it ran away involuntarily. Twelve months ago had hæmaturia for about three weeks, accompanied with violent pains in the loins. Never had total retention till five days ago, and has since only voided some urine in driblets. A catheter had been

passed up to the handle, but no water brought away. Continued in great pain till admission. Complains now of great pain over the bladder, which is very full and tense. Has a large hydrocele on the left side, somewhat altering the natural direction of the urethra. Was put into the warm-bath, and had two grains of opium. Mr. Cock passed No. 9 into his bladder without any difficulty: the obstruction was purely prostatic, and between two and three pints of water were drawn off, which was highly ammoniacal, and dark-coloured. The catheter was passed daily, and the bladder syringed out with tepid water. He was ordered support and wine, and to take dec. cinch. \bar{c} acid. Continued in same state up to Jan. 11, when the dresser was unable to pass a catheter. A gum-elastic one was introduced, which was followed by some bleeding and much smarting. Has great difficulty of breathing, and catchings. Ordered,

Pil. Sapon. \bar{c} Opii. gr. x. pro suppos.—Dec. Pareir. ex Julep. Camph.

The catheter continued to be passed twice a day, a small quantity of pus coming away at the end of it: urine highly ammoniacal and dark coloured, owing to the blood decomposing in the bladder.

On the 20th he was ordered,

Spir. Æth. Sulph. C. 3*ss*. Liq. Opii Sedat. m xx. Spir. Ammon. C. m xx. ex Julep. Camph. 3 i. t. d.

From this time he became gradually weaker; could take very little nourishment; and his breathing hurried and difficult. He continued getting worse till Jan. 27, when he died.

SECTIO CADAVERIS, eighteen hours after death.—Traces of general peritonitis: pleurisy on right side: the surface of the lungs on both sides were studded with strumous tubercles: emphysema at the anterior edges of both lungs. Slight effusion beneath the membranes of the brain: the arteries at the base were considerably dilated, with their inner coats thickened. Both kidneys somewhat hypertrophic: the tunics thereof thin and lacerable. Cortical substance in three or four places inflamed and softening; tubercular deposition on their surfaces: infundibula and calices dilated, as also the ureters in their whole length, their internal lining membrane softened and thickened. Bladder: its coats considerably thickened: mucous membrane much congested and sacculated: prostate gland had its lateral lobes much enlarged, so as to completely close the urethral canal, abrasion of which seemed to have furnished the hæmorrhage: there were several dépôts of pus about the exterior of the gland.

CASE 54.

Stricture—Partial Retention—Cured.

RICHARD JONATHAN, aged 43: admitted into Naaman Ward, on Dec. 31, 1842, under Mr. Key: a millwright; married, and has two children. Has had more or less urinary difficulty for about twelve years; during which time it has been gradually increasing, and for the last three years has had intolerance, pain, &c. About fourteen days ago a catheter was attempted to be passed, but without effect; and a similar attempt was made four days back. He now has partial retention; complains of great pain over the bladder and in the perinæum; has a swelling opposite the bulb, and is unable to micturate in a stream. No attempt was made to pass a catheter; but he was placed in the warm-bath, and ordered twenty leeches to the perinæum, and fomentation.

Hyd. c̄ Cret. P. Jacob. Ext. Hyos. āā gr. iij. o. n.

Jan. 4. Has passed a good deal of urine by drops. The swelling in the perinæum was opened, and some pus, mixed with blood and urine, escaped. After this, his urine flowed in a stream.

7. Mr. Key passed No. 3, and afterwards No. 5 elastic catheter.

12. No. 5 catheter was again introduced, and also on the 14th, when it was left in for three-quarters of an hour. The urethra seemed to have a very long stricture, an inch and a half down the canal, and also about the membranous portion. The urine passed freely from the opening in the perinæum.

He continued to improve in health, and some progress was made with the stricture. On the 1st of February, No. 7 could be passed through the first stricture, and, on the 9th, into the bladder. Occasional catheterism was had recourse to; the wound in the perinæum closed by the 13th of March; and No. 9 could then be passed into the bladder with very little pain. He passed his water in a full stream, became quite free from any irritability of bladder, and was presented on March 18th, cured.

CASE 55.

Stricture.

JAMES SAXBY, aged 50: admitted into Naaman Ward, on Jan. 11, 1843, under Mr. Cooper: a dyer; of darkish features, spare habit, healthy and temperate: married twenty years, and his youngest child is thirteen years old: resided in Sudbury, Norfolk. About five years ago, without any known cause, he first experienced more or less difficulty in micturition, and about a year after was the subject of retention. An instrument was then introduced, but with great pain, and by no means easily. Had another attack of retention about two years

ago: no instrument could be passed, and he was at length relieved by leeches, warm-bath, &c. Many attempts have been made since, but his bladder was never entered. For the last six months has had intolerance, straining, and pains in the loins: urine varies in colour, but always clear, and free from deposit. Much swelling and induration about the bulb, where there is a very firm stricture.

Mr. Cooper with some difficulty introduced No. 6 catheter into his bladder, and ordered it to be left in.

Calom. gr. iij. Opii. gr. iſs. stat. Haust. Sennæ mane.

The catheter was withdrawn after two hours, as pain was complained of in the perinæum.—Hirudines viij. perinæo.

Nov. 25. The catheter was again introduced on the 20th, and with more ease.

Feb. 14, 1843. Attempts to pass a catheter have recently failed. Ordered,

Hyd. Chlor. gr. iſs. Pulv. Jacob. gr. v. Opii. gr. i. stat.
Mist. Salin. 6tis horis.

21. Left the hospital, his health much reduced, and still suffering from considerable urinary difficulty.

CASE 56.

Retention—Enlarged Prostate—Relieved.

JAMES DRAKE, aged 70: admitted into Accident Ward, on Jan. 18, 1843, under Mr. Key: married; is a bootmaker, pale and thin. On the 13th inst. had retention, for which he took narcotics with temporary relief: since then he has passed his urine only by drops; and not being satisfied, he applied to a medical gentleman, who made several attempts to pass a catheter into his bladder, but without any success. On admission, he was put into the warm-bath, had a grain of opium, and then a full-sized catheter was readily passed into his bladder: a good deal of water was drawn off. He did not require the use of the catheter again; and he passed his water with great ease, although very frequently.

Finding himself so much better, he left the hospital on the 20th.

CASE 57.

Stricture—Relieved—Re-admitted nine months afterwards.

WILLIAM ALLEN, aged 55: admitted into Philip Ward, on Jan. 25, 1843, under Mr. Morgan: a labourer; temperate: has been married twice. Twenty years ago had gonorrhœa; and for nine months took a great quantity of medicine, and was freely salivated. From this period he appears to have had gradually-increasing urinary difficulty and stricture; although the chief symptoms have come on since his second marriage, about fifteen years ago. Has several times had

retention, which was relieved by the catheter and other means. All his symptoms have of late become aggravated.

Jan. 29. A catheter was passed into his bladder. Ordered,

Liquor Potassæ, Mucilage, and Camphor Mixture.

Was better on the following day.

Feb. 3. All his symptoms much aggravated by unsuccessful attempts of the dresser to pass a catheter.

Left the hospital on Feb. 22, relieved from the more aggravated symptoms which he experienced previous to his admission.

On June 5 he called on Mr. Cock with almost total retention: his bladder was greatly distended, and his urine passing from him in drops and with great suffering. Had been gradually getting worse since leaving the hospital. His urethra, about the bulb, was swollen, indurated, and very tender. Was recommended to go to the hospital; which, however, he did not do; but experienced some relief by keeping his bed, and applying fomentations.

Was re-admitted on Nov. 22, 1843, into Philip Ward, under Mr. Cooper, having first undergone a fruitless attempt of catheterism. He was suffering from the same symptoms as in June last, and had obtained no means of relief since. On the following day the catheter was attempted to be passed, but without success: an opening was made into the perinæum, and a small abscess evacuated. He continued to suffer under almost total retention; but was, however, relieved in the night by the water finding its way pretty freely through the wound*.

On Nov. 24 he was much relieved, the urine passing by the wound and the urethra.

CASE 58.

Stricture—Retention—Relieved.

JOHN DODD, aged 44: admitted into Lazarus Ward, on Jan. 29, 1843, under Mr. Morgan: a watchmaker; married twenty years: has lived very intemperately: constitution destroyed. Has had stricture and urinary difficulty for fourteen years, following gonorrhœa; and since then has had more or less gleet. Has been drinking hard for the last three weeks, and was brought into the hospital with retention. His water was drawn off after warm-bath and opium. On the 30th a catheter was passed, which much aggravated his symptoms.

Feb. 1. Was suffering from accumulation of water, and could only expel it by drops. A catheter could not be passed; and the perinæum and urethra were very tender. Ordered leeches and fomentations.

2. No. 3 was passed without much difficulty by Mr. Cock: a quantity of dark urine was drawn off, with great relief, and the instrument

* See Appendix.

was left in for three hours. In the evening, the dresser attempted to pass a catheter, which was followed by great pain and bleeding.

3. Has been unable to pass his water, and all his symptoms are aggravated. In the evening had rigors, swelling of the penis, and tenderness of the perinæum. A catheter could not be introduced. Ordered,

Opil gr. ij. Calom. gr. iij. st. ; and fomentations.

He passed a good night, and voided his water freely.

No attempt to pass a catheter was subsequently made : he got rid of his urine pretty easily, and left the hospital on Feb. 11th.

CASE 59.

Impermeable Stricture—Relieved.

WILLIAM SKIPP, aged 38, admitted into Cornelius Ward, on Feb. 8, 1843, under Mr. Key: a labourer, from Brentford: married six years, and has three children: stout, florid, and healthy. Had gonorrhœa when he was sixteen, which lasted a year, during which time he took much medicine but used no injection. From that period his stream of water gradually diminished and confirmed stricture supervened. Eight years ago was in St. Thomas's Hospital with retention of urine, to relieve which his urethra was opened at the perinæum. He was there four months, and could pass a tolerable stream when he went out. About twelve months afterwards he had again retention, after drinking freely; but this lasted only a few hours. Has since occasionally had catheters passed, but none within the last year, and all his symptoms of obstruction have been increasing. Has had urethral discharge during this twelvemonth. Four days back he had retention; but on the following day, after great efforts, he voided a small quantity of urine. An instrument was then attempted to be passed, but without success: his water began to pass guttatim, and has continued to do so up to his admission. Was placed in the warm-bath, and had two grains of opium.

Feb. 9. No. 3 was passed into the stricture, and left in for a few hours. Ordered,

C. C. lumbis ad 3viiij.

Pil. Col. c̄ Cal. gr. xv. st.

Haustr. Sennæ, postea.

10. No. 2 sound was passed into the bladder. Ordered,

Opil gr. iiss. stat.

14. The sound was introduced on the 11th, and again to-day, without much pain. Ordered,

Hirudin. x. perinæo. Liq. Potass. m x. ex Dec. Uvæ Ursi, t. d.

24. No catheter has been passed since the 14th: he has not so

much pain in the perinæum, and passes his water in a very small stream.

March 6. A small gum-elastic catheter was passed; which was left in till the following day; when it was withdrawn, as the urine could not flow through it: a small stream immediately followed.

March 9. Is now suffering from pretty severe fever and rigors: has pain in the perinæum. Ordered,

Hirudines x. perinæo; et omitte mist.

Julep. Ammon. Acet. c̄ Vin. Ant. t. d.

20. No instrument has been since used till to-day, when No. 7 was passed. Ordered,

Dec. Pareir. ʒiſs. t. d.—To omit the use of the catheter.

On the following day he had severe rigors, fever, and great pain in micturition; which however subsided in the course of a few days.

April 7. Passes his water pretty freely, and was presented.

CASE 60.

Spasmodic Stricture—Relieved.

CHARLES MATTHEWS, aged 22: admitted into Stephen Ward, on Feb. 8, 1843, under Mr. Key: a hosier; unmarried: is short, thin, strumous and cachectic: very irritable: lives moderately. Five years ago had gonorrhœa, for which he took much copaiba, cubeba, &c., and used injections; but they did not cure him, as he has had a gleet ever since Stricture followed, and has been increasing for the last four years. Has had frequent retention, especially after drinking; which was relieved by partial or entire passage of bougies, these, however, always producing much spasms. Has suffered much from intolerance, and has been under a variety of treatment in medicines and catheterism. A small catheter was passed, which gave excessive pain: the canal was very irritable, and the stricture almost entirely spasmodic. A No. 3 sound was occasionally passed, and left in for three-quarters of an hour, which was followed by some improvement in his symptoms. On the 18th he was ordered,

Tinct. Ferri Sesquichlor. m x. ex Inf. Quassia, t. d.

He was removed into Billet Ward on March 1st, when Mr. Cock passed Nos. 3 and 5 without difficulty: the lower half of the canal still excessively irritable: has frequent erections, and nocturnal emissions. Ordered,

Pil. Sapon. c̄ Opii, pro suppos.

Tinct. Lupuli, ʒſs. ex Mist. Mucil. t. d.

He left the hospital on March 10, with all his symptoms nearly subsided, and his health improved.

CASE 61.

Stricture—Relieved.

JOHN JOHNSON, aged 48: admitted into Stephen Ward, on Feb. 8, 1843, under Mr. Key: a widower four years; is an excavator; exposed to weather, and very intemperate; pale and thin. Three years and a half ago had gonorrhœa; and took copaiba &c., but used no injections: soon afterwards he experienced symptoms of stricture, and had retention, which subsided spontaneously. About a year afterwards he had another attack of retention, which was relieved at an hospital: since then has been twice similarly affected, requiring the use of the catheter. Has constantly had great difficulty in passing his water; and for the last six weeks it has frequently come away involuntarily, or guttatim. He has a very hard cartilaginous stricture just anterior to the membranous portion. Ordered,

Pil. Sapon. gr. v. Ext. Hyos. gr. iij. t. d.

Gradual dilatation, by means of the catheter, was employed: and on March 10, No. 8 could be passed; but he was still unable to make water in a full stream.

March 18. No. 9 can be passed into the stricture; and he was presented.

CASE 62.

Stricture—Relieved.

JOHN BROWN, aged 66: admitted into Stephen Ward, on Feb. 15, 1843, under Mr. Morgan: an intemperate sailor, of good general health. Attributes his present attack to having had gonorrhœa thirty-five years ago, which lasted for three years; this was followed by stricture, from which he has not been perfectly free ever since. Has been under treatment in America, and in St. Thomas's Hospital, but with only partial and temporary relief. Was at Guy's Hospital two years ago, under Mr. Cooper, and went out relieved; but soon had a return of the complaint. He has a chronic cough. Bladder very irritable, especially in cold weather, when he frequently cannot retain his urine for more than an hour. There is a slight stricture in the spongy, and another in the membranous portion of the urethra.*

Mr. Morgan having passed a large sound down to the stricture, and made pressure for a minute, succeeded in introducing No. 4 sound: no hæmorrhage followed.

On the ensuing day there was some pain and irritation about the

* The patient had visited Mr. Cock a few times previous to his admission. He was then passing his water in a thread-like stream, with great pain and effort: and a catheter, of the very smallest size, was with difficulty introduced. By gradually increasing the size of the instruments the stricture was dilated; and a day or two before he entered the hospital, No. 5 had been passed with ease: his severe symptoms had then entirely subsided.

urethra and neck of the bladder; which was controlled by leeches to the perinæum. Calomel and opium, and house-medicine.

March 3. Mr. Morgan introduced the largest-sized sound without any difficulty. Ordered,

Liq. Potass. m xv. Tinct. Hyos. m xx. ex Mist. Mucil. t. d.

March 7. Much better: urine passes in a full stream, and can be retained for some time. Left the hospital.

CASE 63.

Stricture—Unrelieved.

WALTER THOMAS, aged 43: admitted into Naaman Ward, on March 3, 1843, under Mr. Key: has been a baker; a widower six years: has led a free, and, in his early days, a somewhat dissolute life: seems to have acquired a stricture at the age of twenty-three, after gonorrhœa and the use of injections: has had more or less urinary difficulty ever since: twelve years ago he underwent a course of catheterism at St. George's Hospital, and was relieved; but he gradually relapsed. During the last two years the disease has become much aggravated: the stream is now very small, often in dribblets, and passed incontinently: great straining, and all the symptoms of confirmed permanent stricture.—Ordered, calomel and opium every night.

March 18. No. 2 catheter was passed into his bladder, and again on the 1st of April; but no amendment followed. He continued much in the same state as on admission: for some time instruments were discontinued, and suppositories of soap and opium ordered.

On *June 11*, a small sound was introduced into his bladder: little or no improvement ensued; and he left the hospital unrelieved.

CASE 64.

Stricture—Retention—Relieved.

SAMUEL EVERETT, aged 57: admitted into Cornelius Ward, on March 17, 1843, under Mr. Cooper: formerly a soldier, now a shoemaker: has been very intemperate until within the last two years: married thirty years: had never any urinary difficulty till twenty years ago, when he received a violent blow on the loins, and passed blood with his water for a few days, and then got quite well. Six months afterwards, without any previous irregularity in micturition, was seized with retention after excessive drinking: he passed no water for three days, during which catheterism &c. was employed without effect, and he was relieved spontaneously. Ever since has laboured under all the effects of confirmed stricture; and has had retention over and over again. Has been constantly under medical treatment, has taken immense quantities of medicine of all kinds, and attempts have been made to pass instruments, without success. For

the last five years all his symptoms have increased progressively. The stream is small and thread-like: he has great straining, intolerance, pain in loins, urine loaded with mucus. On his admission, he had passed no water for twenty-four hours; was in great pain, and had distension of the bladder. Was placed in warm-bath, and had opii. gr. ij. calom. gr. iij. No. 7 catheter was passed into his bladder, and the water drawn off. Ordered, fifteen gr. of calomel and colocynth. Catheter removed in the evening.

March 18. Rigors during the night: has passed very little water: perinæum tender: bowels not opened. Ordered, castor-oil. Leeches to the perinæum.

10 P. M. Has passed scarcely any water: rigors continue: bladder distended. No. 1 catheter was passed by Mr. Cock, and the water drawn off.

19. Retained the catheter till the morning. Bladder empty. Ordered,

Spir. Æth. Sulph. C. ʒss. Spir. Ammon. C. Liq. Opii. Sed. āā
m xx. 3tis horis.

20. Has got rid of a good deal of water: is quite easy, although he has a considerable accumulation in his bladder. A small catheter was introduced, and a large quantity of turbid alkaline urine drawn off. This was retained until the following day, when it was removed in consequence of the great pain and rigors. Mr. Cooper subsequently attempted to pass a catheter, without success: the caustic bougie was employed several times, but made him worse. He still continued to suffer from occasional rigors resembling ague; but was able to get rid of his water tolerably well. He left the hospital on April 24.

He called on Mr. Cock on May 9. He could then void his water with tolerable ease, but in a small stream, and with some straining: had neither retention nor intolerance. No instrument could be passed.

CASE 65.

Retention—Stricture—Relieved.

HENRY DAVIS, aged 30: admitted into Cornelius Ward, on March 18, 1843, under Mr. Cooper: a delicate excitable man: married six years, and has two children: a gardener, of temperate habits. Eight years ago had gonorrhœa for three months; for which he took a good deal of medicine, but used no injections. About a year afterwards he received a violent concussion on the lower part of the belly, by a horse falling on him: he passed blood in clots, and mixed with his urine, for several days; but continued working until a few days after the accident, when he began to have swelling of the scrotum

and penis, with which he was laid up for five weeks. From the time of the accident his micturition has been impaired, and has continued so ever since, although varying much in intensity at different times. Three years ago had retention, which was relieved by a catheter; and he has since had more or less urinary difficulty. On the 9th inst. he was seized with retention; and, after fifteen hours, an instrument was passed into his bladder after several attempts had been previously made. Since then has been able to get rid of his water in a small stream.

March 22. Mr. Cock passed No. 1 into the bladder: the urethra was rough and irregular.

In a few days afterwards No. 5 was introduced; and he was improving. Left the hospital on April 3, relieved.

CASE 66.

Permanent Stricture—Severe Constitutional Symptoms—Pneumonia—Death—Post-mortem Appearances.

SAMUEL NEWBERRY, aged 50: admitted into Stephen Ward, on March 22, 1843, under Mr. Key: led an intemperate life: married, and has four children. Has had stricture for seventeen years, the greater part of which time it has troubled him very slightly. About a year and a half ago his urinary symptoms became aggravated; his water flowed in a very small stream, and required much straining to be expelled. He continued getting worse till last summer; when incontinence supervened, obliging him to leave off work: he had also considerable pain in the loins. A catheter then was attempted to be introduced, but without success. Instruments have been occasionally used since. Yesterday he came from Gravesend in a steamer, and exposed to severe cold weather. This morning his urethra was examined in the surgery. He went out at noon; had a severe attack of rigor; and in the afternoon was brought to the hospital in a collapsed state. His pulse was weak and compressible: tongue slightly furred.—Fomentations applied to the perinæum. In the evening he was much relieved.

March 23. Appears much better to-day; and he says he feels in his usual state of health: urine passes guttatim, and involuntarily.—Mr. Key passed No. 5 catheter into his bladder, and drew off some water. He subsequently had pain deeply seated in the perinæum, and rigors, which lasted for several hours. During the night he sank rapidly into a state of extreme collapse and coma.

24. Still remains quite insensible: surface of body cold: face sometimes flushed, and at other times deadly pale: pupils slightly dilated, and motionless: pulse 120, quick, and very feeble: tongue dry, and covered with a dark brown fur. No stertor or difficulty of breathing. Had some calomel in the night; and his bowels had been

recently open. No distension of the bladder; and a small quantity of his water had dribbled away.—Mr. Cock attempted to introduce a catheter, but did not succeed: the urethra appeared to be much disorganized.—Ordered,

3 viij. of Wine, and support.

Spir. Æth. Sulph. 3ss. Sp. Ammon. Arom. m xx. ex Inf.

Serp. 4tis horis.

March 25. Somewhat rallied: is, for the first time, conscious; and has answered several questions: pulse very feeble, and quick: pupils sensible: bowels opened: has passed a good deal of water involuntarily.

26. Much improved in every respect, and expresses himself as better. No tenderness about the abdomen. Passes a large quantity of water, which was able to be collected: it was acid, and not coagulable. Pulse fuller, and tongue losing its dark fur.

27. A low form of delirium supervened during the night, and all his symptoms became aggravated: is unconscious. Urine dribbles away. In the evening he somewhat rallied.

28. Continued to rally during the day. His breathing is now difficult, from bronchial-mucous accumulation. Mucous râles are to be heard over anterior surfaces of both lungs universally; and in the posterior part of the left is tubular respiration. In the evening he had much dyspnoea, and all his symptoms again became aggravated: urine dribbles away, and is quite clear.

29. Continued in a low state all night: dyspnoea became more urgent; and he died in the afternoon, about five o'clock.

SECTIO CADAVERIS.—Twenty hours after death. Pneumonia, with consolidation at the posterior part of lungs, which sank in water: larynx and bronchi contained much mucus.

Liver, spleen, and kidneys, in an unhealthy condition. Fluid of the spinal cord opaque, and morbidly coagulable.

Muscular coat of the bladder enormously thickened, but the cavity tolerably capacious: lining membrane inflamed, and ecchymosed: ducts and follicles of the prostate capacious, and containing a quantity of muco-purulent secretion: bulb much enlarged and indurated.

Permanent, narrow, undilatable stricture, at the commencement of the membranous portion of urethra. The catheter had not penetrated the stricture; but had left the canal anteriorly, and just to the left side of the stricture; and had entered the canal again, close to the verumontanum, at the apex of the prostate. There was also a false passage, piercing the prostate through its centre, and another passing between the prostate and rectum; both terminating in a blind extremity.

CASE 67.

Stricture—Cured.

SAMUEL SMITHBONE, aged 50: admitted into Naaman Ward, on March 22, 1843, under Dr. Barlow, for bronchitis. A hawker: moderately temperate: much exposed to weather: married ten years to a second wife. Had gonorrhœa twelve years ago; and also a chancre at the extremity of the glans, which has somewhat contracted the orifice of the urethra. Has probably had stricture for many years; but for the last four years all the decided symptoms have supervened, with excessive straining, and minute stream, often only a dribble. Never had total retention. Has prolapsus ani, from straining. Has been excessively addicted to sexual intercourse. Has been gradually getting worse, but never underwent any treatment. There is a very firm stricture at the membranous portion, through which Mr. Cock passed No. 1, and left it in for a few hours. Urine very thick, but not ammoniacal.

March 28. All his symptoms relieved: passes his water in a tolerable stream.—No. 2 introduced without difficulty.

30. Mr. Cock passed No. 3 with great ease. All his symptoms have subsided. No. 5 was introduced on the 1st of April, which was the largest size that the orifice of the urethra would allow.

Left the hospital on April 19, with the stricture quite cured.

CASE 68.

Permanent Stricture—Perinæum laid open—followed by great relief.

H—B—, aged 37: admitted into Philip Ward, on March 26, 1843, under Mr. Key. A teacher: unmarried: has led a very dissipated life, but not addicted to drinking: thin, pale, and irritable. Has had continued gonorrhœa since 18 years of age; and for the last ten years has had decided symptoms of stricture. About five years ago had, for the first time, total retention; which was relieved by the catheter, at the London Hospital, where he remained seven weeks, and was much benefitted. However, he gradually relapsed, and went into St. Thomas's Hospital, three years ago, with urgent retention, which was relieved; and, a year afterwards, was in St. Bartholomew's, where he obtained transitory relief. Since this, has had several temporary retentions, and frequent unsuccessful attempts have been made to pass a catheter. No attempt has been made for the last eighteen months. His water has been voided in a dribbling stream for these three years, and with much difficulty and exertion. Has now almost constant desire to evacuate his urine; and, for the last twenty-four hours, has been constantly endeavouring to expel some: is in much pain, with tenderness of the perinæum: urine thick, with copious

deposit. An attempt was made to pass a catheter, but without success.—Ordered,

Warm-bath.

Cal. gr. ij. Opii gr. ij. st. et o.n. Hirud. xx. perinæo.

March 30. Since his admission, he has got rid of his water, from time to time, in small quantities, and only guttatim, with great pain and straining: one or two fruitless attempts have been made to introduce a catheter, the stricture being impermeable, with hardness and tenderness about the bulb. Had voided scarcely any water since yesterday; and the bladder could be felt distinctly above the pubes.—Mr. Key cut into his perinæum, and laid open a deep abscess over the bulb: then he incised the membranous portion of the urethra, and passed, first a director, and then an elastic catheter, into his bladder. A large quantity of urine was evacuated, and the patient was immediately relieved from all his symptoms of distress. The catheter was fixed in, and he was ordered mist. efferves. 2dis horis.

31. Perfectly easy and comfortable: appetite good.—Omit the medicine.

April 4. The catheter was removed, and a small bougie attempted to be passed through the urethra, but without success.

25. Has continued to pass his water through the wound; but now a considerable and daily-increasing quantity finds its way through the penis. No. 3 catheter has been daily passed into the stricture, but not yet into the bladder.

May 13. For the last two weeks the catheter has not been passed; and he has been directed to close the perinæal opening during micturition. The opening is now almost closed, and he passes his water without difficulty, but in a very small stream.—Mr. Key passed a No. 3 gum elastic catheter into his bladder with ease, and ordered him to wear it continually.

26. No. 4 was passed to-day; the wound in the perinæum has become a fistulous opening.

From this time gradual dilatation was persisted in; and about the middle of July a No. 9 catheter could be introduced: but he still passed his water indifferently by natural efforts; and the canal had a tendency to close again. The artificial opening appeared nearly closed: he learnt to pass a catheter for himself; and left the hospital on August 12.

CASE 69.

Stricture—Relieved.

THOMAS BOLINGBROKE, aged 59: admitted into Philip Ward, on March 29, 1843, under Mr. Morgan: a thin, spare man: is a trussmaker. Married when twenty-six; and has been six years married to a second

wife. Had gonorrhœa forty years ago, and appears to have had stricture for thirty-three years; since which he has never been free from more or less urinary difficulty, but never had total retention. Has been in the habit of passing bougies for himself at different times, but no instrument has been passed *into his bladder* for twelve years. For the last two years he has been gradually getting worse, with all the symptoms of confirmed stricture. Has pain in the loins: urine somewhat coagulable by heat, and is very alkaline.

April 4. A full-sized catheter was introduced yesterday, but the stricture could not be overcome by a moderate use of force. He is now suffering from rigors, and great depression; partly, perhaps, from urethral irritation, and partly from ague, which he has been labouring under some time. Has had leeches and fomentations to the perinæum, and calomel and opium at night.

17. Has been merely taking support, and some gin. He is altogether better: his urine is now not alkaline; and he passes it with tolerable ease. He continued to improve in condition; and left the hospital on May 6, to go into the country.

CASE 70.

Retention—Relieved.

ROBERT BRILSEY, aged 34: admitted into Cornelius Ward, on the evening of April 26, 1843, under Mr. Cooper: moderately temperate: been married between four and five years: had gonorrhœa ten years ago: for the last seven years appears to have passed his water in a somewhat indifferent stream; and has had retention five times, which was relieved by catheter, and other means. The retentions and urinary difficulties seem generally to have followed indulgence in drinking. Had an attack of retention on the day of admission. He had passed no water since yesterday, and had had leeches, warm-bath, &c. The catheter was passed by the dresser, which relieved the retention.

April 27. Passes his water without difficulty.

May 3. A catheter was introduced the day before yesterday; after which he again had retention, and is still suffering from some irritation and urinary difficulty.

Left the hospital on May 6, relieved of his symptoms.

CASE 71.

Stricture—Relieved.

EDMUND ELAM, aged 52: admitted into Luke Ward, on May 3, 1843, under Mr. Key: a labourer; married: is exposed much to wet and cold: is in the habit of drinking. Had gonorrhœa fourteen years ago, which lasted a long time. He took but little medicine, and used no

injection. For the last six or seven years has had gradually-increasing symptoms of stricture, which have become aggravated within the last year. Has never had any advice, or any instruments passed. Complains of pain in the loins during micturition: urine of a natural colour, and in good quantity, but deposits a red sediment and flakes of mucus: while in bed his water passes away involuntarily. The stricture is at the membranous portion, and impermeable. Ordered,

Ant. Pot. Tart. gr. $\frac{1}{4}$. ex Dec. Sarzæ t. d.—Warm-bath, ter in hebdom.

May 11. Increased deposit of reddish sand and mucus: health good. To take inf. buch. \mathfrak{z} iss. bis die.—A small bougie to be passed, and worn constantly, so as to allow urine to flow by the side.

The urine gradually improved in quality; and on the 17th there was no deposit whatever. Gum-elastic catheters were passed, and their size gradually increased; when, on June 16, No. 7 could be introduced easily. Micturates freely.

Left the hospital on June 20.

CASE 72.

Impermeable Stricture at anterior part of Urethra—Gradual Dilatation—Relieved

JOHN PARISH, aged 42: admitted into Cornelius Ward, on May 6, 1843, under Mr. Key: been married twenty years, and has six children: works in the Docks: has good health, and drinks freely: never had gonorrhœa. His stream of water has been gradually diminishing for the last three years, but cannot ascribe it to any cause; within the last year has had a slight discharge from the urethra, and increased difficulty in making water, which continued getting worse till six weeks ago, when he suffered severely from all the symptoms of stricture. Never had any advice nor instruments used. His bladder is now much distended, but the urine passes away guttatim, and without pain. The whole of the urethra is thickened, hard, and rigid: some thin discharge escapes from the canal: urine turbid and mucous. Ordered warm-bath every other day, and the catheter to be passed down to the stricture.

May 19. No progress has been made: he has rigors and increased difficulty in micturition, from an attempt having been made to pass a sound yesterday.

22. Mr. Cock introduced a probe through the stricture, and then a silver director: the contraction was about four inches down, very short in extent, and perfectly unyielding. A bougie, of a smaller size than No. 1, was readily passed into the bladder.

26. The small bougie has been passed daily, but the stricture is much the same: suffers great irritation and rigors. An elastic

gum catheter was passed into the bladder, and left in. Two days afterwards the canal admitted a larger instrument with great ease; which was removed on May 31st, as its presence had irritated the bladder. Can now pass his water in a good stream; and the induration has in a good measure subsided. From this time gradual dilatation of the stricture was employed; and on July 14, a No. 8 catheter was easily passed, without any pain.

July 18. No. 9 was readily introduced, and he passes his water in a full stream. Presented.

CASE 73.

Obliterated Urethra—Fistulous Openings.

CHARLES WINDSOR, aged 45: admitted into Naaman Ward, on May 10, 1843, under Mr. Morgan: unmarried: has worked hard, and led a very intemperate irregular life: emaciated, and his health broken down. Before he was twenty, he lost a considerable portion of the glans penis by a sloughing chancre; and this appears to have been followed by gradual contraction of the extremity of the urethra, with consequent symptoms of stricture, until thirteen years ago, when he had total retention for twenty-four hours, together with partial extravasation, and swelling at the under part of the root of the penis, just anterior to the scrotum. The retention was relieved in St. Bartholomew's Hospital, by puncturing the bladder, above the pubes; and at the same time the swelling, anterior to the scrotum, was incised. The tube was retained in his bladder for fourteen days, when it was removed and could not be returned. The natural extremity of the urethra became completely obliterated, and two fistulous openings became established; one, where the bladder was punctured, above the pubes; and the other just anterior to the scrotum: which latter may be traced down behind the scrotum, where it evidently communicates with the urethra. Through these two openings he has ever since continued to pass his water. The urethra is probably healthy from the bladder into the penis; as when he strains to evacuate his urine he can feel it to become distended. He has constant intolerance and incontinence, and his bladder does not appear capable of holding any quantity of water. His urine is neutral, and loaded with mucus.

May 20. No. 1 catheter was introduced by Mr. Cock, through the anterior opening, into the bladder. His health, and the character of his urine, have since improved.

He left the hospital on the 24th of May, with considerable improvement of the stream of water, and refused to undergo any further treatment.

CASE 74.

Retention—Stricture—Relieved.

THOMAS BUTLER, aged 35: admitted into Lazarus Ward, on May 17, 1843, under Mr. Cooper: is married; has been a postboy: been much exposed to cold, and drank freely. About ten years ago first had stricture; and since then has had frequent and urgent retention, requiring the aid of an instrument. Was in this hospital four years back, with retention and fistula in perinæo; and left in three weeks, much relieved. He was re-admitted about two years afterwards, for rheumatism; when a catheter was passed a few times by Mr. Cock, which relieved the difficulty then existing. Since then he has passed his water with occasional difficulty; but it gave him no trouble until the 12th, when he had retention, and was relieved by a catheter. On the day after admission, Mr. Cooper passed No. 3 catheter, and drew off twenty ounces of highly ammoniacal urine: the stricture was at the membranous portion; the prostate much enlarged; and the perinæum hard and thickened. The catheter was left in for eight hours; and he was ordered,

Opium xv. ex Mist. Camph. st.—M. M. c. M. S. bis die.

May 24. The No. 3 catheter has been passed daily: he urinates more freely, and in a slight stream. No. 4 was easily introduced.

June 4. His water flows in a fuller and larger stream, and with more force: No. 6 passed readily into his bladder. Looks well in health. Left the hospital on June 7th.

CASE 75.

Stricture—Gradual Dilatation—Cured.

THOMAS HOCKLEY, aged 42: admitted into Lazarus Ward, on May 24, 1843, under Mr. Key: a porter: is unmarried, and has lived a somewhat irregular life. About seven years ago contracted gonorrhœa, and had gleet for nearly three years: took much medicine, and used injections. It appears that about six years ago his stream of water became smaller; but no notice was taken of this till three years afterwards, when he had retention, and was in the Westminster Hospital for some weeks. He left quite well; and felt nothing more of it till six months ago, when he began to suffer much pain in micturition, making water in a small irregular stream. He is now suffering from secondary symptoms, mercurial cachexia, and rheumatism, having had syphilis within the last three years; but his urinary symptoms are not very severe, and the canal will admit No. 4 catheter. Ordered,

Pot. Iodid. gr. ij.—Liq. Potass. m xx. ex Dec. Sarzæ, t. d.

A No. 4 catheter was passed daily, until June 3; when No. 5 was introduced, and left in for some time. The urethra was gradually

dilated until No. 7 could be passed: his urinary difficulties soon subsided, and he passed his water in a good stream. On July 1 a No. 9 was passed with ease; and he was presented.*

CASE 76.

Stricture—Retention—Abscess in Perinæum—Pneumonia—Pericarditis—Death.

JOHN KIRBY, aged 24: admitted into Cornelius Ward, under Mr. Cock, on May 24, 1843: a cabman: of irritable temperament: strumous: has red hair: intemperate. Had gonorrhœa four years ago, and gleet ever since, with gradually increasing symptoms of stricture, which have latterly become of the most aggravated kind. Three nights previous to his admission had total retention, which was relieved by No. 1 catheter by Mr. Cock, at the man's residence, when several pints of urine were drawn off. On admission, his bladder had again become distended, and he was suffering much distress. Ordered, warm-bath, leeches to the perinæum, a full dose of opium, with calom.; and afterwards, Tinct. ferri sesquich. ʒss. every hour.

May 25. Has voided small quantities of urine at intervals, and is free from pain: bladder still distended. He continued to relieve himself, but without perfectly emptying his bladder, until May 31; when total retention again came on, apparently produced by a deep abscess forming at the bulb. This was opened by Mr. Cock, and the matter evacuated; but as the retention continued, No. 1 was again passed into his bladder, and his water drawn off.

June 1. Was attacked with peripneumonia on the left side; for which he was bled, cupped, and blistered.

3. Thoracic symptoms abated. He manages to keep his bladder tolerably empty, by natural efforts.

10. Nearly free from thoracic symptoms, except some uneasiness on the left side during full inspiration. Mr. Cock introduced a small elastic catheter into his bladder, and left it there.

14. Was attacked with pericarditis; under which he speedily sank, and died on June 16.

CASE 77.

Stricture—Cured.

SOLOMON JALINK, aged 39: admitted into Billet Ward, on June 7, under Mr. Cock: had been severely mercurialized for chancre two years ago: had always led an intemperate, dissipated life. Is now suffering from secondary syphilitic eruptions, old sore-throat, mercurial pains, tertiary ulcers on the leg, general cachexia, &c.; for which he was ordered sarsaparilla, iodine, and ammonia.

It appears that eleven years ago he contracted gonorrhœa, and

* See Appendix.

has hardly ever since been free from gleet: did not take much copaiba, and used no injections. For the last ten years had had more or less symptoms of stricture: a year and a half ago had retention; and was relieved by a very small elastic catheter: now passes his water with considerable difficulty. Mr. Cock introduced No. 1 catheter; and then passed a very small elastic one, which was left in. The urethra is very tender, and bleeds easily. The catheter was kept in several hours; and some irritation followed.

A few days afterwards No. 2 was passed, and left in for fifteen hours; after which his water flowed in a full stream. No. 2 was again introduced; and he left the hospital on August 8, much improved in health, and passing his water freely, the canal admitting an instrument of moderate size.

CASE 78.

Stricture at the Extremity of the Urethra—Cured.

ANDREW DESMOND, aged 34: admitted into Naaman Ward, on June 7, under Dr. Babington, for some visceral affection; and was seen by Mr. Cock on July 15, in consequence of urinary difficulty: is unmarried: has worked in the Docks: intemperate: phthisical. Between four and five years ago had gonorrhœa; he used injections, and took large quantities of medicine: has ever since had occasional gleet, and gradually increasing symptoms of urinary obstruction. Stream is very small: some intolerance: he empties his bladder. On examination, the canal was found contracted just within the lips, so as with considerable difficulty to admit a probe. The contraction was not above a line or two in extent, but very firm. It was dilated, until No. 1 catheter would pass, which met with no other obstruction in the canal. Water deposits lithic acid.

July 17. Mr. Cock dilated the strictured canal, before and behind, with a knife, so that No. 9 could readily be admitted: it is to be kept open by occasionally introducing a bougie.

Left the hospital on July 24, quite well, and urethra admitting No. 9.

CASE 79.

Stricture—Retention—Relieved.—Re-admitted, with Retention, two months afterwards—Relieved.

WILLIAM BULL, aged 45: admitted into Philip Ward, on June 10, 1843, under Mr. Cooper: a bricklayer, married seventeen years: has drank freely. Sixteen years ago he was ten weeks in Guy's Hospital for stricture, and went out well; and never experienced any difficulty till between five and six years ago, when he contracted gonorrhœa, and had gleet for eight months; which was followed by gradually increasing difficulty, and the usual symptoms of stricture. Has never had any advice or assistance. On the evening of the 9th he was

unable to pass any water; and was admitted the next morning. He was placed in the warm-bath, and had calomel and opium; and relieved himself soon afterwards. A catheter could not be introduced. The use of the caustic bougie was recommended, and continued at intervals: he continued to pass his water without symptoms of retention, until he left the hospital on June 24th; no instrument been passed into his bladder.

He was re-admitted, under Mr. Key, in August 21, suffering under an attack of retention. The dresser passed a catheter down to the stricture, and he was almost immediately relieved, and enabled to pass his water.

Aug. 23. Mr. Key yesterday introduced an instrument down to the stricture, but could not penetrate it: he now passes his water better than he has done for a long time.

29. No. 2 was passed into his bladder; some blood followed.

Sept. 16. A moderate-sized catheter can now be passed into his bladder. Left the hospital on Sept. 19. Relieved.

CASE 80.

Stricture—Relieved.

CHARLES FAIRMAN, aged 59: admitted into Stephen Ward, on June 14, 1843, under Mr. Key: a labourer, temperate and steady: married a second wife nineteen years ago. It appears that about fourteen years ago he received some injury to the pelvis, and was admitted into ——— Hospital; where a catheter was attempted to be introduced, until the point of the instrument made its appearance between the anus and the cocyx: extravasation followed; and a fistulous opening formed at the part where the catheter had come out, through which he passed his water. He wore a catheter for three months: the opening closed, and he gradually got well. He subsequently broke his thigh; and was in Accident Ward, Guy's Hospital: and about ten years ago was again admitted under Mr. Key, for confirmed stricture, which had been gradually coming on since his recovery from the first accident. He was eleven weeks in the hospital, and went out well; and remained so until about a year ago, since which the symptoms of stricture have been gradually increasing.

July 28. Gradual catheterism has been employed, and No. 4 can now be passed; the principal difficulty consisting in a deviation in the course of the canal at the membranous part. He passes his water with much more ease, but still suffers from intolerance and irritable bladder. Left the hospital in the beginning of September; his condition altogether improved.

CASE 81.

Permanent Stricture—Relieved.

MORRIS BENJAMIN, aged 46 : admitted into Philip Ward, on June 28, under Mr. Cooper : a pen and quill-manufacturer : unmarried : temperate : has had bad health, and pulmonary complaint with bronchitis, for the last ten years. Had gonorrhœa fifteen years ago, but without any particular consequences. Two years and a half ago, without any assignable cause, he began to pass his water in a diminished stream, and soon had all the symptoms of confirmed stricture. About a year back was taken into the London Hospital with retention, and was there some months : underwent catheterism, but with little benefit : has now almost total retention ; the bladder distended, and the water passing in a mere dribble. A moderate-sized catheter was introduced into his bladder, which was kept in until the next day.

July 7. Has been kept quiet, and is somewhat better. Mr. Cooper passed No. 5, and left it in. The catheter was removed on the 11th, and he passed his water in an improved stream.

18. Much improved. No. 6 passes with ease, and he voids his water without difficulty, although it contains much mucus.

Left the hospital on August 15, passing his water without any difficulty, the canal admitting a full-sized catheter.

CASE 82.

Stricture—Extravasation—Fistulous Openings—Operation—Death—Post-mortem appearances.

GEORGE ROGERS, aged 48 : admitted into Naaman Ward, on July 5, 1843, under Mr. Key : a strong healthy man ; temperate and steady : was originally in the Artillery, but afterwards a brewer's servant. Seventeen years ago, injured his perinæum by falling on the edge of a cask ; and for three days continued to bleed from the urethra. There appears to have been no particular external injury ; but symptoms of stricture commenced from the time of the accident, and gradually increased, until seven years ago, when he was admitted into the Winchester Hospital. Here he was relieved by catheterism, and continued tolerably well for some time ; but the symptoms recurring, he was again catheterized in St. Bartholomew's Hospital, and without permanent benefit. A year ago he was in the same hospital, with retention and extravasation. The perinæum and urethra were incised by Mr. Lawrence ; but no passage could be effected into the bladder, although Stafford's cutting-instrument was used. Has ever since passed his water by the perinæum. On admission, he was suffering from intolerance and difficult micturition ; the scrotum swollen, indurated, and inflamed by chronic inflammation and old extravasation. There are three fistulous openings ; from one of which the water comes in a

small stream, and from the others in a dribble; a few drops pass by the penis. No instrument has been introduced into his bladder for three years.

July 7. Has been kept in bed, and used the warm-bath: all his severe symptoms have ceased; he is free from pain, and has no intolerance: urine acid, and not coagulable.

20. Mr. Key endeavoured to restore the canal by passing a grooved sound as far as it would go, and cutting on to it through the perinæum: the incision was very deep, and the whole of the structures around the urethra were hard and cartilaginous. On continuing the incisions further, with a view of opening the urethra behind the stricture, the hæmorrhage was so great, that it was thought best to put the man to bed, and apply ice: the bleeding soon stopped, but left him weak.

25. He passes his water through the wound, but with considerable pain and difficulty. The urine is loaded with mucus, and is very alkaline. He gradually sank, without any very marked symptoms, and died on August 18th.

SECTIO CADAVERIS.—A good deal of healthy fat, and tolerable muscular development: old pleuritic adhesions on both sides: some serum in the left pleura, and about half-a-pint of sero-purulent fluid at the back part, circumscribed by the adhesions: some old adhesions in the abdomen, connecting the spleen to the colon, and drawing the latter up into the left hypochondriac region. The kidneys presented the most-advanced stage of mottled degeneration, but were too much decomposed to allow of minute investigation. The infundibula much dilated; the ureters slightly so, and containing muco-purulent fluid. The bladder capacious and flabby; full of sacculi, but not hypertrophied, or otherwise materially altered in texture. The prostate large, and the ducts dilated and open. The urethra, as far down as the deep perinæal fascia, was extensively surrounded by indurated cartilaginous structure: it was healthy and natural as far as the opening made in the operation, viz. the membranous portion: immediately behind the opening was the contracted portion, which, during life was impermeable to instruments, and nearly so to urine: it extended for about two-thirds of an inch, and now admitted the passage of a large probe: it was deeply surrounded by indurated structure; the relaxation and softening of which, after death, had probably left the canal pervious: beyond the contraction, the canal was again expanded to the bladder, and coated with lymph. Immediately behind the stricture were the openings of two small fistulous passages, evidently of long standing, and well defined: they were lined by a smooth membrane, just admitted the passage of a small probe, and led into the perinæum.

CASE 83.

Retention—Sloughy Abscess over the Pubes—Cured.

CHARLES BOWEN, aged 52 : admitted into Naaman Ward, on July 27, 1843, under Mr. Key : labourer ; temperate and steady ; works hard : married sixteen years. Has a hydrocele, of some standing, on the right side. States that he has been perfectly free from all disease, and has never had any urinary difficulty or genital affection whatever. On the 22d inst. he first became aware of some swelling and tenderness about the root of the penis, which has been gradually increasing. On the 23d he began to pass his water less freely, but had no retention. On admission, there was considerable swelling and redness around the root of the penis, extending over the pubes : scrotum and perinæum quite free.

July 27. Swelling, redness, and tenderness increased, taking a direction upwards : it had very much the appearance assumed by extravasated urine. A catheter was passed up to the hilt : no water came. It was considered to be abscess in the neighbourhood of the prostate, the matter finding its way upwards along the pubes. The catheter gave great pain and irritation, and, when removed in a couple of hours, was filled with blood.

28. 9 o'clock P.M. Had passed but little water since the introduction of the catheter, and none for the last seventeen hours. There was no particular distension of the bladder ; and he complained chiefly of the external pain from the greatly-increased swollen state of the pubes, where the evidence of matter was very palpable. Mr. Cock made an incision over the pubes, and a quantity of dirty pus escaped : the finger introduced into the wound, passed down on each side of the root of the penis, through the broken-up cellular tissue. There was considerable hæmorrhage, and great constitutional irritation. Mr. Cock then introduced a catheter into his bladder without any difficulty, and drew off about two pints of dark urine, which had evidently been some time retained. Ordered,

Tinct. Opii. m xxx. ex Julep. Ammon.

29. Much better in every respect. The swelling, tenderness, &c., greatly reduced. His water was drawn off this morning. The sponge and compress, which had been retained on account of hæmorrhage, were removed, and a poultice applied.

Aug. 2. Is able to pass his water : the wound still discharges sloughy matter : no evidence of extravasation : swelling subsided.

7. Is improving, under good diet and porter.

Left the hospital on the 22d, well.

CASE 84.

Stricture—Relieved.

JAMES WITHERS, aged 50: admitted into Stephen Ward, August 16, 1843, under Mr. Key: a surgical-instrument maker. According to his own statement, is temperate and steady: married twenty-five years, and has had a large family. Has been for many years habitually and obstinately constipated, to which he ascribes his urinary difficulties. His urinary affection commenced about four years ago, with incontinence; since which his difficulties of micturition have been increasing. For the last three months has passed his water in a mere dribble, with scalding pain along the urethra, pain in loins and around the abdomen: urine very turbid. A catheter was passed a few days before his admission, by Mr. Key, since which he has been better.

Aug. 17. No. 5 was passed, and his symptoms were improved the next day.

20. No. 7 can be passed. Left the hospital on August 28.

CASE 85.

Stricture—Great local and constitutional symptoms following the use of the catheter—Death.

ISAAC BARRETT, aged 43: admitted into Naaman Ward, on August 23, 1843, under Mr. Morgan: a tailor: married; has no family: of regular habits: health tolerably good. Fifteen years ago had testitis, and about ten years back had gonorrhœa and syphilis. Began to suffer from symptoms of stricture between seven and eight years ago. Has had retention several times, and has frequently been temporarily relieved by the use of bougies; but he soon relapsed into his former condition, and the use of instruments has been abandoned for the last nine months. Micturition performed guttatim, rarely in a stream, accompanied with severe pain in the perinæum and along the course of the cord, extending to the loins and front of the abdomen: bladder irritable: urine pale, exalbuminous, and free from deposit: violent pain and scalding along the penis. The attempt to introduce a catheter produced a good deal of suffering, but no hæmorrhage. Ordered, leeches to the perinæum.

Aug. 30. Has had a catheter passed down to the stricture every other day: has had rigors, accompanied with great pain; but now feels better, and passes his urine more freely, less frequently, and in a larger stream. Had thirty leeches to the perinæum on the 24th, and twenty more were ordered to-day. To take,

Calom. gr. iv. Opii gr. i. h. s.

Liq. Potass. c̄ Tinct. Hyos. aa m. xx. ex Mist. Mucil. t. d.

Baln. tepid.

Sept. 20. A catheter has been passed down to the stricture every other day, up to the 12th instant. It at first produced occasional, rigors and great pain, but this gradually subsided: has remained free from pain since. The stream of water is not increased, and he remains much the same. He has had twenty leeches twice applied.

22. A catheter was introduced nearly up to the handle, but not into the bladder, and was followed by rigors in the evening. Leeches warm-bath, and sedatives.

23. A No. 4 catheter was passed into the bladder, the water drawn off, and the instrument allowed to remain in. Had severe and almost continued rigors during the whole night.

25. Symptoms of tympanitis came on yesterday, which are now somewhat relieved: is very low. Ordered wine; and to continue calomel and opium. Catheter left in, as he can scarcely pass any water by the natural efforts.

27. The catheter came out in the night, and has not been re-introduced: passes his water with great pain and difficulty: has low fever, and dry tongue: no abdominal tenderness. Urine has become muco-purulent, owing to an internal abscess having given way into the urethra, which has much relieved him. Has sedatives and fomentations.

Oct. 4. Has been able to relieve himself tolerably well, without the use of the catheter; but his urine has contained large quantities of pus, which is now diminishing. Has continued to have low typhoid symptoms, with great deep-seated pain and tenderness in the perinæum; but no fluctuation to be felt. Pain in passing his motions; and all the symptoms of abscess between the bladder or prostate and rectum, communicating with the urethra or bladder. The perinæum was explored on the 6th, by an incision, but without result. In the course of a few days his symptoms were slightly relieved by a discharge of pus from the urethra, and he rallied somewhat. Was removed to his home on Oct. 10, by his own wish, but with little hopes of ultimate recovery. Died about a week afterwards.

CASE 86.

Retention—Stricture—Relieved.

JOSIAH BARTON, aged 56: admitted August 29, 1843, into Cornelius Ward, under Mr. Morgan: a shoemaker, of intemperate habits: married, and has had no family. About twenty years ago was in St. Thomas's Hospital for stricture, which was attributed to a long continued gonorrhœa: it was relieved, but never thoroughly overcome. Underwent a course of catheterism about seven years ago; but his symptoms of stricture increased, incontinence supervened, the urine was voided in drops, and occasionally deposited a thick, tenacious,

fetid sediment. His bladder became irritable, and unable to retain any urine for three-quarters of an hour; and he experienced soreness and pain in the perinæum and hypogastrium. For the last six months the dysuria and incontinence have increased; and to-day an attack of complete retention came on, causing great suffering and rigors Cal. gr. iij. opii gr. ij., with purgatives, were given him; after which No. 2 catheter was passed, and about two quarts of turbid, highly-coloured urine drawn off. The urethra is very irritable, and the prostate enlarged, impeding the entrance of the instrument at the neck of the bladder. Urine acid, and not albuminous. Ordered,

Calom. gr. iv. Opii gr. i. h. s.—Haust. Sennæ cras mane.

Aug. 30. Has passed no water, but is free from pain and distension.

Sept. 1. A catheter was used yesterday, but to-day he has passed his urine naturally.

On the 12th he was ordered iodic. potass. gr. ij. ext. conii gr. iij. t. d. A gradual and daily use of bougies was employed, without producing any irritation; and on the 1st of October the canal was so far restored, as to enable him to pass for himself No. 10 with comparative ease. Urine was much healthier, transparent, and free from deposit. He was presented on Oct. 5th, relieved.

CASE 87.

Permanent Stricture—Relieved.

GEORGE SMITH, aged 37: admitted into Stephen Ward on September 9, 1843, under Mr. Key: married six years, and has two children: has been a servant, of somewhat dissipated and intemperate habits. Twelve years ago had gonorrhœa, with phymosis, and long-continued gleet. Began to have symptoms of stricture about four years back; and between two and three years ago underwent catheterism with but temporary benefit, as a repetition was soon required. Rather more than a year ago was in St. George's Hospital for a short time; and he has been getting worse ever since. Has the ordinary symptoms of permanent stricture, with small stream, and intolerance.

Sept. 22. Gradual catheterism has been employed, with calomel, antimony, and opium. No. 3 can now be passed; and he is altogether better.

Nov. 16. No. 4 is passed every other day: his bladder is very irritable. For the last two weeks has been taking morphia, nitric acid, and tincture of iodine.

Left the hospital on November 21, relieved.

CASE 88.

Stricture—Relieved.

JAMES KNOWLES, aged 52 : admitted into Stephen Ward, on September 13, 1843, under Mr. Key : labourer : moderately temperate : married thirty years. Has had symptoms of stricture for seventeen years ; and during the last four they have become aggravated : has had catheters used ; but it does not appear that any instrument has ever been passed into his bladder. Makes water in a small stream, with no great suffering or intolerance : urine turbid.

Sept. 12. Bougies have occasionally been passed down to the stricture ; and he is somewhat better, as regards micturition.

28. Mr. Key passed a small catheter into his bladder.

Oct. 7. A full-sized catheter can now be passed, with some difficulty, through the stricture. Left the hospital soon after, relieved.

APPENDIX.

See CASE 57. p. 197.

He continued to improve for some time, passing his water, in an increasing stream, through the urethra, while the escape of urine through the perinæal opening became proportionably diminished. Repeated attempts were then made to introduce a catheter into the bladder, followed by successive attacks of irritation and aggravation of his symptoms, until he suddenly became the subject of severe dyspnœa, attended with general collapse and fluttering, irregular pulse, which was variously attributed to organic disease of the heart, effusion into the pericardium, &c.

Evidences of deep-seated abscess in the perinæum, however, soon shewed themselves: a spontaneous opening was formed low down, near the anus; and, as the matter became evacuated, his late distressing symptoms subsided. The greater part of his urine found its way through the new opening, and he was altogether relieved. He has now (*March 1844*) in great measure, recovered his health; and his water again passes, in an improving stream, through the natural passage. No farther attempt at catheterism has been made.

See CASE 75. p. 211.

Was re-admitted February 28, 1844, under Mr. Morgan, suffering from a fresh attack of general rheumatism. He stated that micturition was not quite so free as when he left the hospital in July last; but a No. 7 catheter passed with the greatest ease into his bladder, and the canal appeared to be perfectly sound and healthy.

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REPORT OF CASES
ILLUSTRATING
DISEASES OF THE BRAIN
AND NERVOUS SYSTEM.

CASE 1.

Arachnitis.

ELIZABETH MOORE, aged 19, single, a servant, living in London, was admitted into the Clinical Ward on March 23, 1843. She had menstruated rather irregularly, but had enjoyed pretty good health till the commencement of her illness, a fortnight before admission, when she was attacked with severe pain in the head and loins, febrile symptoms, and occasional delirium. Venesection had been used, and blisters and leeches applied behind the ears and to the nape of the neck. Strabismus had supervened two or three days before admission. She complained of severe pain in the head; the tongue was injected, moist, and coated with a thick yellow fur; the skin dry, but cool; the pupils were rather small, but did not vary under the stimulus of light, or on its withdrawal; and there was strabismus. The pulse frequent, small, and compressible; her aspect dull and heavy; she answered questions rather incoherently; and subsultus tendinum was occasionally observed. The abdomen was rather tender on pressure. She was ordered to have beef-tea and arrow-root; and after taking three grains of calomel, followed by half an ounce of castor-oil, the following treatment was prescribed:—

Hyd. \bar{c} Cretâ gr. iij. ter die sumend.

Ung. Hydrarg. \mathfrak{z} i. singulis axillis bis die infricand.

Empl. Cantharidis pone singulas aures applic.

Sinapismata singulis pedibus.

The bowels were twice acted on. She passed a very restless night, with much incoherence; the gums were tender on the day following; the pulse 112, very small and weak; the subsultus tendinum and delirium continued; and a collection of puriform mucus in the trachea and bronchi interrupted respiration, and was with difficulty expectorated, and that without cough. The mercurials were omitted; and she was ordered,

Ammon. Sesquicarb. gr. iv. ex Infusi Serpentarise \mathfrak{z} i. 4tis horis sumend.

March 25. She had passed an equally restless night, with grinding of the teeth, catching at imaginary objects, subsultus, and muttering delirium: the urine was passed involuntarily. Respiration was less obstructed; but she appeared to refer to the larynx as the seat of pain: the pulse were exceedingly feeble and rapid, and the gums were decidedly under mercurial action.

Brandy, beef-tea, &c. were administered without rallying her; and she died in the evening, but without having had any convulsions.

SECTIO CADAVERIS, fifty-four and a half hours after death.—

Head. The vessels of the pia-mater were much congested: numerous glandulæ Pacchioni were seen on each side of the longitudinal fissure. Beneath the arachnoid on the convexity of the hemispheres, there was some opaque albuminous effusion, with thickening of the membranes. At the base of the brain there was considerable serous effusion, as far backwards as the pons Varolii; and about the optic commissures there was much opaque albuminous deposit. The convolutions were flattened, and closely packed: the puncta vasculosa were numerous and large: the lateral ventricles contained more fluid than is usually found.

Thorax. There was congestion of both lungs posteriorly, with a circumscribed spot or two of hepatization of the size of a shilling in the right lung. There was vascular turgescence of the bronchial membrane, and a frothy mucus in the tubes.

Abdomen. The aggregate and solitary glands were prominent and vascular, but no ulceration was observed. There was considerable hepatic venous congestion.

The remaining organs were found healthy in appearance.

CASE 2.

Arachnitis.

JAMES PENTUM, aged 22, a cigar-maker, living in Blackfriars-road, was admitted on Dec. 28, 1842. He was of rather small stature, and spare frame, light complexioned, and of rather intemperate habits, but had enjoyed general good health. Five out of eleven of his children were said to have died from hydrocephalus when quite young. About nine months before admission he received a blow on the forehead from a skittle-ball, which rendered him insensible; but the bone was stated by the surgeon, who saw him, to be uninjured. He had since had occasional pain in the head; but continued pretty well until two days before admission, when he was attacked by pain in the stomach and nausea, followed by pain in the head and drowsiness. He had passed the previous night in convivial society, and on the

day following he was delirious, but not violent. Leeches were applied to the head; venesection was used; and sinapisms were applied to the feet. On the day of admission he continued delirious, with constant muttering, and was brought to the hospital in the evening, when the eyelids were half closed, the conjunctivæ congested, the pupils sluggish, and the irides irregular. The face was dingy-looking: he was almost insensible; but was very restless and delirious: the tongue was dry and rather brown, and sordes were on the teeth; the pulse 132, small and soft; and the pulsation of the carotids strong and visible. The head was shaven, a blister was applied to the nape of the neck, and one grain of calomel was ordered to be given every four hours.

On the 29th he continued delirious and muttering; seemed to suffer much pain in the head; had no convulsive symptoms; but he lay moaning and turning himself about constantly in bed, and rolling his head; but gradually sank into a more complete state of insensibility, in which he died, at 9 P.M.

No urine had been passed until withdrawn by a catheter: the pulse continued rapid and weak; and the tongue dry, rather brown, and furred.

SECTIO CADAVERIS.—Head. The sinuses and veins were full and turgid: the pia-mater was much injected: the arachnoid, upon the convexities of the hemispheres, was slightly opaque.

There was effusion of yellowish, semi-opaque, albuminous matter in the fissures between the convolutions, on the hemispheres, on the vermiform process of the cerebellum and adjacent parts, and on the pons Varolii.

The cortical portion of the brain was dark-coloured and lacerable. The puncta vasculosa were numerous.

The lateral ventricles contained a small quantity of transparent fluid; and the veins beneath the lining membrane were injected.

The kidneys were congested; the ureters rather dilated; and the bladder contained several ounces of high-coloured urine, which was slightly coagulable by nitric acid.

The remaining viscera presented no notable morbid condition.

CASE 3.

Hydrocephalus.

R. HOLLAND, aged four years, a delicate-looking child, with an expanded head, and prominent forehead, was admitted Jan. 5, 1844. Before the present illness he was of an active and amiable disposition,

and of a quick intellect: he had a favourable dentition, without convulsions; but two of his infant brothers died of brain disease.

During the two months before admission a trifling drowsiness and slight internal strabismus of the right eye were observed; and in about three weeks after their first appearance he complained of pain in the abdomen, which was followed by febrile symptoms, exacerbating towards night, and assuming the characters of infantile remitting fever; and he had had considerable stupor. On admission, his aspect was pallid and subdued; the face looked puffy; the pupils were dilated and sluggish: he lay in a kind of quiet stupor; and complained, when asked, of pain in the forehead and occiput. The sutures were closed and ossified: the surface of the head was hot, and that of the body harsh and dry: respirations were 30 in the minute; the pulse 132, small and regular; the abdomen flat, and painful on pressure in the epigastric region; the tongue pale and white, with prominent papillæ: he had anorexia and slight thirst. The alvine evacuations were dark, scybalous, and offensive. The urine was loaded with lithates, and was slightly albuminous as tested by exposure to heat. The head was shaved; four leeches were applied over the mastoid processes; an aperient of calomel and castor oil was ordered; and on the following day, the bowels having been freely evacuated, three grains of hyd. c̄ cretâ were ordered every night, and five grains of carbonate of soda, in mint water, three times a day, and an evaporating lotion was applied to the head.

He continued in much the same state until Jan. 9, when he was more restless, his expression more anxious, and the pulse 145, and very small; the bowels were open; the evacuations costive, but of a lighter colour: the tongue dry, and rather brown, with white edges; and the pain in the head continued.

A blister was applied behind each ear; mercurial inunction was ordered, and the medicines were continued.

In the following night sudden collapse and stupor ensued, followed by screaming and slight convulsions.

On Jan. 10 he continued in a state of stupor, with occasional screams: the evacuations were passed unconsciously; and the pulse were very rapid, and almost imperceptible. He was ordered to have two grains of calomel every two hours, and ammonia julep every four hours, and sinapisms were applied to the feet.

On the 11th there was some remission of the symptoms: the pulse were 72, very small, weak, and irregular: he had frequent flushings of the cheeks, with perspirations, and occasional screaming.

On the 12th he lay prostrate; very little urine was secreted; and the bowels were very sluggish. He took beef-tea and arrow-root.

The calomel was ordered to be given every four hours; two drachms of ol. terebinth. were given in barley-water as an injection; and the catheter was directed to be used twice daily.

Emaciation continued. Scanty and offensive watery evacuations were induced by the enemata, and the stupor increased.

On the 15th he became quite comatose, with frequent convulsions, laboured respiration, and very rapid, thready, irregular pulse: the convulsions continued at intervals; and he died the following morning at eleven o'clock.

The urine was examined almost daily, but no traces of albumen were again observed.

SECTIO CADAVERIS.—Head. The convolutions of the brain were flattened and pale; the arachnoid dry; the lateral ventricles distended with serum; the foramen of Monro was enlarged and irregular; the posterior portion of the fornix softened. The cerebral substance in the other parts appeared healthy: the sub-arachnoid tissue at the base of the brain was much infiltrated, pale, and opaque.

Tubercles were distributed through both lungs, and their edges were emphysematous.

The right side of the heart was turgid: the mesenteric glands were hypertrophied and indurated: the other viscera were healthy.

CASE 4.

Local Paralysis and Neuralgia.

ANNE TILSON, aged 47, a married woman, with a family, living at Mile-End, having lately been in very indifferent circumstances, of temperate and regular habits, and usually enjoying good health, was admitted on Aug. 7, 1843. She had dark eyes, light hair, and light complexion, with anxious expression of countenance, and cachectic aspect, and was very weak. On Saturday evening, two days before admission, she was attacked with pain suddenly appearing behind the right ear, with tumefaction of the part: the whole right side of the face then became benumbed; and the features were drawn to the opposite side. On admission, the right side of the face, from the mesian line to the front of the ear, and as low as the middle third of the right side of the neck, was insensible; but the parts immediately behind the right ear and below it were acutely sensitive and painful. The mouth was drawn to the left side, and she was unable to shut the right eye; and the muscles on the same side of the face were all paralyzed. The right half of the tongue was insensible to the touch; but that organ was protruded straightly: articulation was confused, as if from the distortion of the mouth. From the above

it would appear that the three divisions of the fifth and the portio dura were paralyzed: that the cutaneous branches of the cervical plexus were in part paralyzed, but in part acutely sensitive.

The pulse were feeble, but accelerated; the tongue rather white; the bowels open; and the appetite impaired. She perspired profusely at intervals. She was allowed low diet, with two eggs daily; was cupped on the nape of the neck to 3xiv. ; and was ordered to take five grains of pil. hydrarg. with fifteen grains of sesquicarbonate of soda in mint water three times a day.

The sleep was very much interfered with by the pain; and she continued much the same until the 9th, when the gums were tender, and the pill was reduced to three grains once a day.

After this she improved, suffered less pain, and the cheek became sensible to the touch: she continued extremely weak.

The gums became more affected; she continued improving, gaining strength, and sensation becoming more natural. The pills were omitted on the 14th, and the infusion of serpentary was ordered three times daily, and a gargle of chlorinated soda. By the 25th, sensation was equally perfect on both sides of the face and tongue; but the features were still distorted, and the eye could not be closed. Quinine, with diluted sulphuric acid and serpentary, was then prescribed; but relaxation of the bowels supervening, cretaceous mixture was administered. She, however, progressed favourably: the appetite improved, the features were less distorted, and articulation more distinct; and on September 2 she left the hospital, and was again seen on the 11th, when she was much stronger, but the features were still a little awry.

CASE 5.

Hemicrania.

JOHN STOCKDALE, aged 29, a turner, of temperate habits, and generally enjoying good health, of pale and sallow aspect, with light complexion, was admitted on Sept. 14, 1842, having been long exposed to the influence of miasmata. He first experienced, about fourteen months ago, pains, chiefly confined to the left side of the head, somewhat periodic in character, for which he was under medical treatment; but the symptoms nevertheless continued. He had taken mercurial alteratives, quinine, colchicum, and iodide of potassium. Issues and blisters have been applied to the nape of the neck; cupping had been used; and liq. arsenicalis tried: all, however, with only temporary relief. On admission, the pain was occasionally very severe on the left side of the head; pulse were 75, steady, compressible; the appetite tolerably good; tongue pale and moist;

bowels regular; and no evidence of thoracic or abdominal disease existed. Sensation and motion were unimpaired.—Ordered,

Extracti Stramonii gr. i. o. n. sumend.

Quinæ disulph gr. iij. formâ pilulæ, ter die.

Decocti Aloës Co. ʒi. omni mane, si opus sit.

He did not improve: the bowels were regulated by the decoction; and the stramonium was increased on the 22d to gr. iiss. o. n.

He continued with little variation until Oct. 6th, when gr. i. of the extract of stramonium was ordered night and morning, and a dose of salts and senna occasionally, in addition to the quinine and decoct. aloës co., as the bowels were confined. No change was observed until Oct. 20th; when he had a discharge of blood and matter from the right ear, which was followed by considerable relief.

The ear was then syringed with warm water every morning: the pain in the head almost entirely subsided; his general aspect and health gradually improved; a slight purulent discharge continued from the ear until the 31st of October, when he was ordered to continue the stramonium at night with liq. potass. arsenitis m vi. ter die ex infuso cascariillæ.

The pain quite left him; his general appearance and health very much improved; and on Nov. 14th he left, quite well.

CASE 6.

Scrofulous Tumor of the Brain, with Softening, Convulsions and Paralysis.

JOHN ROUSE, aged 30, a strong healthy-looking man, of temperate habits, was admitted on April 19, 1842. He had enjoyed general good health, with the exception of syphilis four years previously, from which he lost the uvula. In June 1841 he had six fits, occurring in one day, and consisting in convulsive movements of the mouth and extremities, with insensibility; after which he had partial paralysis of the right arm, which remained weak for some time; but he returned to work in a few weeks. He had a slight return of the convulsions in December, but had not been subject to head-ache, nausea, or vomiting. About three days before admission he again lost the use of his arm; and on the day of admission he had two convulsions, affecting the muscles of the face and right arm with insensibility. On being visited in the ward, he appeared dull and oppressed, but answered questions when aroused, though confusedly: the right arm was paralysed; the angle of the mouth drawn to the left side; and articulation imperfect. The face was florid and congested; and the pulse full, slow, and sluggish.

Full venesection was used: he was cupped, purged, and brought

under the influence of mercury, but without any improvement. He continued dull and oppressed, but without coma, or any return of convulsions, until May 6th; when he had a slight convulsion, during which the left arm was spasmodically twitched. In the evening he was incoherent, bathed in perspiration, and the respiration was stertorous. He was nearly unconscious, and could not protrude the tongue: the right arm was still paralysed, but not completely so: the urine and fæces were passed involuntarily: no remarkable alteration in the symptoms occurred; and he died in forty-eight hours afterwards.

SECTIO CADAVERIS.—The interior of the calvarium was irregular and rough, as if from a kind of hypertrophy: the outer surface of the dura-mater was very hard and granular: its arachnoid surface tumid, red, and spongy. There was much thickening and general adhesion of the membranes at the left temple, to the size of a crown-piece: in the centre of this was a tuber, as of dark, firm, scrofulous matter, the size of a small walnut, but of an irregular angular figure, with traces of vascular membranous layers surrounding it, and apparently nearly confined to the pia-mater. The whole brain was remarkably dark, especially the cortex: the greater part of the left hemisphere was, in addition, decidedly soft, yellowish, and watery, probably the result of inflammation extending from the tuber.

Slight ossific deposit was observed on the aorta and its valves. Nothing further was observed worthy of remark.

CASE 7.

Tubercles in the Brain, &c.

GEORGE STOCKER, aged 6, a strumous, delicate-looking child, with light hair and eyes, and fair complexion, was admitted Jan. 26, 1843. His health had never been very good, and about four months previously he received a blow from a fall on the supraciliary ridge, but continued pretty well until three months afterwards, when he was attacked with severe pain in the head, and slight sickness. Medicines afforded only temporary relief, the symptoms re-appearing in a few days, and continuing; but were much aggravated four days before admission, when he was convulsed for a few minutes. He was very sleepless, and complained of his head.

On admission, he was very restless, turning constantly in bed, and rolling the head about, frequently screaming, and complaining of pain in the head and at the scrobiculus cordis, with thirst and loss of appetite. He was convulsed the evening before, and had several convulsions that morning: the pupils were dilated and sluggish; the pulse frequent and weak; the tongue moist, and rather furred;

and the bowels freely acted on by aperient medicines, the evacuations being very offensive.

The treatment consisted in the application of four leeches to the temples on the 26th, repeated on the 27th: blisters were applied to the nape of the neck, and to the shaven scalp; and the patient was brought under the action of mercury by inunction in the axillæ and the administration of hyd. c. cretâ in doses of two grains every four or five hours.

He continued much the same, screaming at intervals; and manifested some intolerance of light, and the pupils were more active under exposure to the light of a candle. He lay in a half-insensible state, but still very restless; and the nose was sore from his frequently picking it. The pulse were from 120 to 130, and weak; and he could be persuaded to take but little food. On the 8th, the gums were slightly sore. On the previous day he had been ordered 1-16th of a grain of ant. pot. tart. every six hours, which was omitted on Feb. 1st, when he had a return of the convulsions, was more restless, had grinding of the teeth, and the pupils were more dilated: the pulse were 132, and weak; and the alvine evacuations were passed involuntarily. He continued the mercurial treatment.

On the 2d, the gums were more tender, the extremities cold, and the pulse 144: in other respects he was much the same. Beef-tea and arrow-root, with an ounce of sherry, were given.

On the 3d, he was much the same, and had passed a quiet night.

On the 4th, he was drowsy, and more quiet, and the pupils were more dilated.

On the 6th, he was quite comatose; the evacuations were passed involuntarily; and the pulse were 150; the pupils dilated, and insensible to light. He continued in much the same condition; had convulsions during the night; and died on the following morning.

SECTIO CADAVERIS.—Head. In the posterior inferior occipital fossa adhered two strumous tubercles larger than peas, feebly adherent to the dura-mater, and very readily detached from cells in the cerebellum, in which they were situated.

One or two tubercles, about the size of a pea, existed in the white matter of the brain: they were more numerous in the grey matter, and were in different stages of translucence and softening. The ventricles seemed very wide, and contained a clear fluid, in larger quantity than normal. The membranes of the spinal cord were opaque, thickened, rough, and vascular. The lungs and pleuræ were studded with miliary tubercles. The spleen and liver contained a few opaque tubercles. The mesenteric glands were enlarged: there were slight

abrasions of membrane in the lower part of the ileum, with thickening of the surrounding part. The kidneys were coarse, and hard, and contained a few yellowish granules of different sizes.

CASE 8.

Cerebral Symptoms and Epilepsy following Lactation and Exhaustion.

SOPHIA KNIGHT, aged 33, a pale unhealthy-looking married woman, living at Shoreditch, mother of eight children (the youngest of whom was eleven months old, and had been weaned only four days), was admitted on March 26, 1843.

Her diet had for some time been scanty and poor: her general health good: she had not menstruated since her confinement. About a week before she first experienced severe headache, with vomiting, rigors, dimness of vision, and *muscæ volitantes*: these symptoms were aggravated by stooping, and alleviated by rest and recumbence. She was bled at this time, with temporary relief; but the symptoms returned with more severity.

On admission, with the above symptoms, the tongue was rather white; the bowels were confined; the *mammæ* were tender, hard and nodulated, and secreted a small quantity of milk. She kept her bed; was ordered a dose of blue pill and salts and senna, which opened the bowels; and she felt somewhat relieved: the breasts improved in a few days; but the pulse continued very weak: she took also acetate of ammonia three times a-day.

On the 31st she was much as usual; but in the afternoon, having been up for a little while, and complained of vertigo, she was seized with a fit, which lasted ten minutes: she was insensible, and much convulsed. It was followed by drowsiness and severe headache; but she neither bit her tongue nor screamed, but was perfectly unconscious of the occurrence.

On the next day she complained of throbbing pain in the forehead, and a sensation of weight in the right arm: the tongue was moist, and coated: the pulse 100, and very weak. A blister was applied to the nape of the neck; a grain of calomel was ordered night and morning; and a dose of magnesia and salts occasionally.

She was much better after this: and, on the 3d, three grains of sesquicarbonate of ammonia were added to each dose of the mixture.

On the 4th she had an acute pain in the right side, increased on taking a full inspiration, which was relieved by the application of dry cupping: the pulse continued very weak, 90.

On the 6th she was ordered ammonia julep; and a mutton-chop was given daily. She continued improving, but complained of pain

and vertigo on stooping. The bowels being confined, she took some aperient medicine; and on the 13th, as she still complained of pain in the head, a blister was applied behind each ear. She continued to improve, and was quite well when she left the hospital, on the 16th.

CASE 9.

Chorea.

HARRIET BLEWITT, aged 10, an intelligent little girl, of spare habits, with red hair, light eyes, and fair complexion, and always in a delicate state of health, had been, three years before, when nursing her infant brother, alarmed by letting him fall from her arms; and to this circumstance both her mother and herself attributed the origin of the present disease. About a week after the above accident, irregular and involuntary movements appeared in the right arm and leg; and, in the course of a short time the left arm, and afterwards both upper and lower extremities, became involved in these uncontrollable movements. They continued up to the period of admission, at intervals, not more than three months ever elapsing without their recurrence. It appeared that she some years before had passed a few small worms, not repeated afterwards. She had been in this hospital before, and has also been in Westminster Hospital twice. She had taken zinc; used the cold affusion, shower-bath, electricity, &c., the latter with apparent benefit. She was admitted on Dec. 8, 1841; when the chorea manifested itself in all the limbs, but especially in the right side, and it was accompanied by considerable distortions, but without apparent distress. Her general health was, on the whole, good; but there was evidently deficient nutrition, her parents not possessing ample means. She was ordered meat diet, and four ounces of port-wine daily; and to take,

P. Jalap. Co. gr. xii. statim.

Liq. Potass. Arsenitis, m iij. ex Aq. Menth. ter die.

On the 11th the liq. potass. arsenitis was increased to m v.; and there had been no improvement.

15th. She was no better. \mathfrak{J} i. ferri sesquioxidi ter die sumend. was substituted for the former medicine.

On the 18th, decided improvement was manifested, and she possessed more controul over the movements of the limbs. The dose was increased to \mathfrak{J} ij. ter die.

On the 27th, her progress having been slow, and electricity having on a former occasion proved beneficial, it was tried in combination with the ferruginous medicine. She did not improve: her general health continued good, and the bowels were regular; but her chorea

had somewhat retrograded by the 6th of January. The former remedies were therefore omitted, and two grains of the sulphate of zinc were ordered three times a-day, which was to be increased gradually. Under its use she progressively improved, the dose having been gradually increased to eight grains three times daily; and on the 7th of February she was presented, cured.

CASE 10.

Chorea.

SARAH Boston, aged 6, a fine-looking, very intelligent child, with full black eyes, dark hair and complexion, living in Bishopsgate Street, enjoying general good health, was admitted on August 2. She was the subject of scarlatina last winter; and about three months before admission, having previously been struck on the head and knocked down by her schoolmistress, her mother noticed the involuntary movements in her limbs characteristic of chorea; which were, however, but slight, though continuing, with little aggravation, to the time of admission. She was ordered *zinci sulph. gr. i. ter die sumend.*

On the 4th, five grains of scammony with calomel were administered, by which the bowels were freely acted on: the movements in the limbs were diminishing.

On the 9th, she was still improving: the dose of the zinc was doubled; and, on the 11th, was increased to four grains. She was then free from chorea; and left the hospital, well, on the 14th.

CASE 11.

Chorea.

ELIZA SADDINGTON, aged 13, a slightly-made girl, of delicate constitution, with brown hair, dark eyes, dilated pupils, and fair complexion, having generally enjoyed pretty good health, was admitted on April 13, 1843. She was frightened by a horse three years ago; and in the following week, nothing peculiar having been observed in the interval, twitchings of the muscles of the face were observed, on account of which she was punished by her parents: the symptoms became more general and severe: and the attack lasted four months; this first was the most severe attack. She never quite recovered: she became very excitable; and often burst into tears on the slightest occasion. The second attack was in the following spring, and it lasted two months: in both, she was under medical treatment. The present attack commenced about three months before admission, and was more severe at first; being afterwards confined to the muscles of the upper extremity and face. The heart's action was, on

admission, irritable; and there was a *bruit*, of a metallic character, accompanying the second sound, heard in the situation of the sigmoid valves and in the course of the aorta.

The tongue was rather dry, and whitish; the bowels were regular; the appetite good: she complained of a constant aching pain at the lower part of the sternum, which was usually worse before meals: sleep was undisturbed. She was ordered *zinci sulph. gr. ii. ter die sumend.*

She gradually improved, and her movements became more controllable. The zinc had been, by degrees, increased; and, on the 25th, amounted to ten grains three times a-day, without producing nausea.

On the 30th, the dose was increased to sixteen grains, without nausea. She was then almost steady; the appetite was very good; and the bowels regular. The above dose was continued until May 9, when she went out quite well. The *bruit* had continued throughout, and then remained.

CASE 12.

Chorea.

JANE COLES, aged 16, a nurse maid, with dark hair and eyes, and sallow complexion, living in the Borough, having been in the hospital with chorea two years before, when the attack was more severe. She had never menstruated, but had enjoyed general good health. She stated that the attack supervened one month previously, after having been frightened by letting a child fall from her arms; and that the involuntary movements had been very slight. She was admitted on August 2, 1843, and was ordered—

P. Scammon. ̄ Cal. ʒi. st.

Haust. Sennæ, cras mane; and middle diet.

The catamenia appeared on August 4: her general health was pretty good; and the movements of the limbs were trifling. The menses continued flowing until the 9th. She continued pretty well, and the chorea was scarcely perceptible. She was ordered, on the 11th,

Ferri Sulph. gr. ij. Pil. Aloës ̄ Myrrh. gr. v. ter die sumend.
and on the 14th left the hospital, quite well.

CASE 13.

Chorea.

EMMA FOX, aged 9, of fair, florid complexion, of general good health, and never before having been the subject of a similar affection. About two months previously, having been much frightened by some oxen during the day, she was much alarmed in consequence during

the night; and on the following morning her mother observed that she could not keep herself quiet or steady, especially noticed while doing any thing. Her left hand was then the part most affected; she became worse; and the involuntary movements more general, but the right side was the least affected, and the face was almost free. Her appetite was craving: the bowels costive: the sounds of the heart natural: the pulse 80, small, weak, regular. She was admitted on October 25, 1843, and ordered,

Zinci Sulphat. gr. v. ter die.

Haust. Sennæ c Mag. Sulph. ʒss. st.

On the 30th, was much improved: the bowels were open: the zinc was increased to six grains.

On Nov. 2 the zinc was increased to twelve grains.

On Nov. 6, the symptoms having for some time been stationary, she was ordered to take two minims of liq. potass. arsenitis in infus. cascarrilla three times a-day, and to omit the zinc. The medicines last prescribed caused sickness, and were consequently omitted; and she was ordered, on the 10th,

Rad. Rhei Ras. ʒi. Vin. Lusitanici ʒviij. macer. per horas 24 et cola; capt. ʒi. ter die.

On the 12th, improvement was manifest: the bowels were freely acted upon.

On the 20th, pulse were stronger and fuller; the bowels were open four or five times daily; the chorea was slight, mostly affecting the lower extremities; and on the 28th she was presented, well.

CASE 14.

Chorea.

JAMES WEBB, aged 15, a tall, thin, delicate-looking lad, of active habits, living at Walworth: had an abscess in the neck, after measles, when quite young; but otherwise healthy. Two months before admission he was frightened by an accident to a cart, in which he was riding, but was himself uninjured; but in two days afterwards the involuntary and uncontrollable movement of the muscles of the face appeared. In the following week they left the face, and appeared in the left arm; and so continued till admission, when his aspect was pale; tongue moist, and clear; appetite good; bowels regular. He was admitted on Jan. 4, 1843, and was ordered,

Mist. Magnes. c Mag. Sulph. et Vin. Colch. m xx. ter die sum.

Hyd. Chlorid. gr. ij. Opii gr. ss. Ant. Pot. Tart. gr. ʒ, formâ pilulæ, o. n.

Jan. 7. The bowels were rather relaxed; but his hand was much

steadier. He was ordered to take his pill night and morning. Under the above treatment he continued to improve, the bowels being freely acted upon: and was quite well, and left, on Jan. 21. The pills were omitted on the 10th, as the gums were rather tender.

CASE 15.

Hemiplegia, with Aphonia.

GEORGE COTTON, aged 30, a commercial traveller in London, tall, and strongly built, of light complexion, and pale and pasty aspect, of temperate and regular habits, and enjoying general good health, with the exception of slight habitual cough, and frequent rheumatic pains, was admitted on Sept. 14, 1842. He first had pain in the head on Sept. 7, especially about the vertex and forehead: and on the following morning, after washing, he fell down, apparently faint, the face and hands being cold and pale: he was insensible, and remained in this state for a quarter of an hour; after which he recovered, but had four of these fits in the course of the day. During these his right side was strongly convulsed, and he lost his speech for five minutes during each attack, the convulsion ceasing as soon as the speech returned. On the morning of the 10th he lost his speech and the use of the whole right side of the body. At this time he was bled; but only three ounces of blood could be drawn: cold was applied to the head, and purgatives were administered.

On admission, the head was observed to be well formed, and it was the seat of a dull pain: there was complete hemiplegia of the right side; loss of speech; and the tongue, when protruded, inclined to the right side: it was moist, and covered with a white fur: the breath was foetid; the bowels had been constipated for three days; the urine was healthy. The pulse were frequent, full, and hard: the surface of the body was hot, moist, and exhaling an acid odour. The intellect was unimpaired. He was ordered low diet; and, on Sept. 15,

Enema Terebinth. statim.

V. S. ad $\frac{3}{4}$ xij.

Pil. Hyd. gr. v. bis die; et Mist. Sennæ Co. $\frac{3}{4}$ iss. o. m.

The blood drawn was buffed and cupped, but the clot was not very firm: the pulse, on the 16th, continued full and hard, 100; the tongue white, and furred; the bowels not open. The bleeding was repeated to the extent of $\frac{3}{4}$ x., a purgative powder was administered, and the senna mixture was ordered to be taken twice a-day.

On the 17th the blood was neither buffed nor cupped, and the coagululum was looser; the bowels were freely acted on; the pulse

were 90, soft and compressible. He continued in nearly the same state until the 24th, when the gums were affected by the mercurial: he still had pain in the head. A blister had been applied to the nape of the neck, without benefit: the pulse continued soft; and the bowels were freely open. The blue pill was given every night only, and the following mixture prescribed,

Pot. Iodid. gr. ii. Liq. Potass. m xv. ex Julep. Menth.
sumend. ter quotidie.

and an occasional purgative was ordered, with an improved diet.

In the course of a few days sensation began to return in the affected parts; and, by Oct. 8, he could move the right leg, but the right arm remained motionless: sensation was still improving; the tongue still inclined to the right; he was decidedly under mercurial action; and the pills were omitted.

He was cupped on the nape of the neck on the 16th, and a seton was introduced on the 18th; but he improved very slowly.

On the 23d, half an ounce of decoct. aloës comp. in mint water was ordered three times a day, and the other medicines were omitted.

In the beginning of November he improved more rapidly, was enabled to walk with a stick, and was beginning to regain the use of his arm. In the first week of December he was able to walk without a stick, but the right leg was moved with a dragging motion: his arm was also improved. The seton was withdrawn from the neck.

He continued slowly improving until Dec. 31, when a little dragging of the right foot in walking still remained: the power of the right arm was still much impaired; sensation was nearly perfect; but speech was still lost: he left the hospital.

CASE 16.

Hemiplegia.

WM. SAUNDERS, aged 27, a coal-heaver, living in Blackfriars, was admitted on Nov. 30, 1842. He was of middling height, and rather robust frame; light complexioned, and of intemperate habits; having usually enjoyed good health, but had had, during the last two or three years, a large ulcer on each leg. During the last five or six months he had become dull and dispirited: and his intellect had been often confused. Three months before admission he had considerable hæmorrhage from one of the ulcers, in consequence of an injury received in a fall, and fainted afterwards. Three weeks after this he complained of pain in the head; and in a day or two voluntary motion in the right arm and leg became impaired: his right foot was dragged in walking; and he had no controul over

the fingers of the right hand. These symptoms continued increasing in severity; and on Wednesday, Nov. 23, he could no longer walk, and had lost nearly all power of motion in the arm. On Sunday he had a fit, commencing with stupor, which was followed by convulsions in the right arm and leg, and this again by stupor. On rallying from this convulsion, his speech was lost; and on the following day the muscles about the mouth were spasmodically contracted to the right side. On admission, his aspect was pale, with a peculiar vacant stare: he could neither speak nor protrude his tongue: the right arm and leg were completely paralyzed, but spasmodic twitchings were excited by irritating the sole of the foot and the palm of the hand; and on any object being placed in the left hand, it was with difficulty removed from his grasp. The pupils were natural. He referred to the forehead as the seat of pain, when asked: the mouth was drawn to the right side; and the temperature of the right arm and leg was less than that of the left. The feces and urine were passed in bed. The pulse were 90, occasionally intermitting, but rather small, and weak. He was ordered a colocynth and calomel purge, and to take half an ounce of dec. aloës comp. three times a-day; and he was cupped upon the nape of the neck.

On Dec. 2 he was improved, and could articulate imperfectly, answering questions. The head was hot, and still painful.

He was cupped over the mastoid process; the head was shaven; and an evaporating lotion was applied to it: five grains of pil. hyd. were ordered night and morning, and a dose of haust. sennæ as required.

He continued gradually improving; became more sensible; regained sensation and motion, first in the leg and subsequently in the arm; the tongue was protruded, with an inclination to the left; the temperature of the left side remaining higher for some time. By the 7th of December he was able to call for assistance, and passed his evacuations naturally; he could articulate distinctly, but slowly; the pulse continued frequent; and he had no pain. In a few days afterwards he was able to get up; his intelligence improved; and he continued regaining sensation and motion in the right side.

On the 10th he could use the limbs on both sides equally well, and complained only of the ulcers on the legs. The gums were not affected by the pil. hyd. until Jan. 10, when they became a little spongy, and the pills were omitted. On the 16th he left the hospital. The pulse, which had been rather fuller on the right side, on admission, were then alike at both wrists.

CASE 17.

Hemiplegia, with Albuminous Urine.

DANIEL FRANCIS, aged 72, a strongly-built man, of florid complexion, with short neck and broad shoulders, by occupation a milkman, was admitted on March 20, 1843. He has lived at Lambeth; has been very intemperate, especially formerly; and has lived pretty well. His general health has been tolerably good. Thirty-six years ago, after a severe illness, the character of which it was difficult to ascertain, he was affected with general anasarca; from which he shortly recovered, and continued well until five years ago; at which period he had scarlatina, which was not followed by any dropsical effusion: and about two months afterwards he had a sudden paralytic seizure, affecting the left side, causing him to fall when seized, but not affecting his intellect, and passing off in a few weeks, when he resumed his usual employment, with, however, some permanent weakness of the left arm and leg remaining. He continued pretty well until two days before admission, when he became affected with vertigo, dimness of vision, tinnitus aurium, pain in the head, yawning, weariness, and somnolency, with formication in the fingers of the left hand: but he continued his employment until the morning of admission; when, on endeavouring to get out of bed, he fell, and found himself unable to get up again, owing to paralysis of the left arm and leg. On admission, the mouth was drawn to the left side; the tongue, on protrusion, inclined to that side; the left arm and leg were both partially paralyzed, sensation being more affected than motion; and although he was sensible when touched, he had lost the power of discriminating the particular part touched; and he could raise the left arm and leg by an effort of volition. The left side was cooler than the right: he was very drowsy; moaned and muttered as he lay; but, when aroused, answered questions with considerable vivacity. The pulse were 84; the tongue clean; and the bowels open. The urine was very coagulable, and its specific gravity 1008. He had pain only in the paralyzed limbs, and had slight cedema about the ankles.

An aperient of colocynth and calomel was given; and he was cupped on the nape of the neck.

March 21. The withdrawal of six ounces of blood, by cupping, induced tremor of the muscles and falling of the pulse, which again rose to 86, and became full. The bowels were freely acted on; and the alvine evacuations were passed in bed: the paralysis was more aggravated. A blister was applied to the nape of the neck.

On the 23d, gout appeared in the left hand, which was very painful:

the tongue was dry, and rather brown: the pulse 100, full and strong. The œdema of the ankles had left him; and he appeared to possess more power in the left leg. He was ordered,

Liq. Am. Acet. ʒvi. Aquæ ʒvi. Vin. Colchici, m xii.
fiat haust. ter die sumend.

Hyd. c̄ Cret. gr. iij. nocte maneque sumend.

He afterwards gradually got lower, the tongue browner, and the pulse less frequent, and more feeble: redness appeared on the nates, and over the sacrum; and the paralyzed limbs were very painful. On the 26th he was ordered infusion of serpentary with quinine, and a spirituous lotion was applied to the erythematous nates. He gradually grew weaker; and, on the 29th, a dark sloughy condition had appeared on the nates. The pulse were 60, and very weak: the intellect very confused and wandering. He was ordered wine, in addition to the mixture; and linseed-meal poultices, with powdered bark, were applied over the nates and sacrum. He gradually grew weaker and more insensible, and sank on April 2. The urine continued albuminous throughout.

There was no necroscopic inspection.

CASE 18.

Incomplete Hemiplegia.

ELIZABETH CURTIS, aged 46, a charwoman, of stout frame, tall, and muscular, light complexioned, and habitually exposed to vicissitudes of weather and temperature, was admitted on December 15, 1841.

She was married, without family; of rather intemperate habits; and had menstruated regularly until during the last six months; since which the menses have gradually ceased, but she has been usually troubled with slight leucorrheal discharge. Her general health had been otherwise good.

Eight weeks before admission, after exposure, she had pain in the head, vertigo, tinnitus aurium, and confusion of intellect, with an occasional incapacity to make herself understood, her words being often misapplied. These symptoms, with constipation and emaciation, continued until her admission; when her aspect was leucophlegmatic, dull, and heavy: the eyes were suffused, the pupils sluggish, and the pupillary margin of the iris was irregular: vision was dim, particularly on the right side; and the looking at bright objects was painful. She complained of vertigo, tinnitus aurium, dull aching pain in the right arm and leg, and their grasping power was impaired. The pulse were slow and weak, rather unequal and irregular; the appetite was indifferent; the tongue dry, and rather furred; there was no

physical evidence of thoracic or abdominal disease. She was ordered low diet, and, on December 15,

C. C. nuchæ ad 3 viij.

Pil. Hyd. gr. v. o. n. sumend.

Inf. Sennæ Comp. c̄ Magnes. Sulphat. et Mist. Camph. āā 3i.
bis die sumend.

She felt relief after the cupping; but the dimness of vision was rather augmented.

On the 17th the pulse were 98, weak and somewhat irregular, and the bowels were open. The cupping was repeated, and the pill was given night and morning.

She afterwards gradually improved in all her symptoms. On Dec. 20 the gums were affected by the mercurial, and the fauces were swollen; the bowels were relaxed; the tongue moist, and rather furred; the pulse were 102, and weak. The pill was ordered to be given every other night only, and a draught of salts and senna as required; and as there was still some pain in the head, and vertigo, a blister was applied behind each ear. On the 23d she was much easier, and all the symptoms were improved: the pill was omitted.

Dec. 28. She was very much better: the pupils were obedient to light; both eyes and irides were natural; vision and hearing good; and she was free from pain: the right side of the body had nearly the same power as the left; and in the course of a few days she left the hospital, well, the gums being slightly tender.

CASE 19.

Incomplete Hemiplegia.

JOSEPH BOLAN, aged 31, a tailor, living in Cornhill, of middle stature, dark complexion, and cachectic aspect, temperate, and of sedentary habits, was admitted on March 29, 1843. He had never been very strong, but enjoyed pretty good health, and had never received any injury to the head or spine; nor had he, or any branch of the family, been subject to fits.

About twelve months previously, immediately after marriage, he began to complain of weakness in the legs and general debility, vertigo, photopsia, tinnitus aurium, and deafness: he was also troubled with incubus. These symptoms continued till about eight months afterwards, when he had a fit, on three successive mornings, of a convulsive character. He gradually lost the use of his right leg, and was unable to work. He had been in other hospitals, and had been salivated, without relief. On admission, his aspect was pale: he complained of occasional darting pains in the head, vertigo,

and tinnitus aurium, with spectral illusions: the left pupil was contracted; the articulation hesitating; and the left corner of the mouth slightly drawn upwards. Memory was impaired; sensation normal: the motion of the right leg was almost completely lost, so as to render it nearly useless. The pulse were 60, small and languid; the appetite was good; the tongue clean; the bowels habitually confined; the skin moist and perspirable.

He was ordered a rhubarb and calomel purge, and to take half an ounce of compound decoction of aloës three times a-day. The bowels were afterwards regular; he improved in general health, and felt stronger; but the right leg continued very much impaired: the pulse were 70, weak. On April 4, in addition to the mixture, he was ordered a grain of pil. hyd. and one grain of pulv. colchici three times a-day. The pain in the head, and other cerebral symptoms, almost disappeared; but returned with aggravation on the 10th, accompanied by rigors: the bowels had been too much relaxed during the preceding two or three days. The pills were given twice only daily, and the ammonia julep was substituted for the other mixture. These untoward symptoms again subsided on the following day. He continued improving; lost all his pains and morbid sensations; regained the power of motion over the leg; but it still remained exceedingly weak. He felt, however, so much better on the 15th, that he, at his own request, left the hospital.

CASE 20.

Incomplete Hemiplegia.

WM. AYLIFFE, aged 59, a married labourer, living in Surrey, of temperate and regular habits, and always having enjoyed good health, was admitted on August 23, 1843.

He was of stout plethoric habit; and had been, since the commencement of the present illness, nervous and irritable. About thirteen months before admission, when working hard, he was suddenly seized with faintness and darting pain in the head; and soon found numbness and feebleness of the entire right side of the body, which had been gradually growing weaker until the time of admission. He was obliged to leave work in February, about six months after the first symptoms appeared.

On admission, his memory was deficient; his articulation was hesitating; sensation and voluntary motion were much impaired on the right side, and this was especially observed below the elbows and knees. He had occasional pain in the occiput; frequent palpitation, and some dyspnoea on lying down: there were no physical signs of pulmonary or cardiac disease: the pulse were 80, regular, but

rather feeble; the tongue was moist, but rough; the bowels were open and regular. He was ordered, low diet; a seton was inserted in the nape of the neck; and to take infusion of calumba, with five grains of rhubarb and eight grains of sesquicarbonate of soda, three times a day.

On the 28th he was attacked with pain across the forehead, vertigo, intolerance of light, and gnawing pains in the legs: the appetite was very bad, and sleep much interrupted: the pulse was 86, and rather weak and small: the bowels were regular.

He was prescribed the common saline draught of citrate of potassa three times a-day, and the other medicines were omitted. After this date, the above symptoms gradually subsided: he continued very weak; but sensation and motion of the right side were improved.

On Sept. 4 the appetite was much improved, and he was allowed middle diet.

On Sept. 15 the pain in the head had quite left him: he could use the right side tolerably; and sensation was but slightly impaired: the sense of numbness had almost left him.

On the 18th the seton was removed.

He continued improving until the 30th, when the right side was as strong as the left, though less active in motion and he still felt weak: he had been taking infusion of cascarilla three times a-day since the 24th; and, on Sept. 31, left the hospital.

CASE 21.

Remote and recent Paralysis.

FRANCIS SMITH, aged 70, formerly a sailor, but recently a water-carrier, living in Rotherhithe, was admitted on Dec. 6, 1843. He was of tall stature, spare frame, and light, sallow, jaundiced complexion, with a narrow receding forehead: he had been of intemperate habits, and had lived well. At the age of 19 he had an attack of paralysis, suddenly affecting both optic nerves, the three divisions of the fifth, and the portio dura of the seventh pair of cerebral nerves, and no other parts. From this he recovered in ten or twelve weeks, and remained in good health. At the age of 32 he had another attack, involving the right optic nerves, the right abducens, and the nerves of the right side of the face. The consequent amaurosis and internal strabismus of the right eye continued; but the other paralytic symptoms left him in a few weeks. In both attacks he stated that his intellects were unaffected.

He had had several attacks of ague, which he first had when in China; and during the last eight or nine years had had repeated attacks of vertigo, and frequent severe pain shooting through the

temples, relieved by frequent bleedings, both local and general, and by the use of purgatives: he had also been subject to rheumatic pains in the limbs, winter coughs, shortness of breath and palpitation, with constipation and hæmorrhoids.

About thirteen weeks before admission he was suddenly seized with paralysis of the left side, and fell in the street. The face, he states, was unaffected; but the speech became confused and hesitating: the paralysis was not complete, having undergone a copious venesection, and been freely purged. It gradually diminished; and, on admission, sensation and motion on the left side were found but little impaired, causing him to walk a little lame, and to grasp less firmly with the left hand. He had, since this attack, had ague of an irregular form, but, at first, of a tertian type; and during the five weeks before admission, jaundice had gradually supervened.

On admission, there was evident hypertrophy and dilatation of the heart, with aortic regurgitation, indicated by a *bruit-de-soufflet* heard with the second sound, and most distinct in the course of the aorta and to the right of the nipple, and between the third and fourth costal cartilages. He had slight bronchitis; was jaundiced; the feet and ankles were œdematous; and there was an extreme internal strabismus of the right eye (the white alone being exposed to view), and slight sclerotic staphyloma, with amaurosis of that eye; and the liver was enlarged.

After being in the hospital about a week, he had two attacks of ague, and his bronchitis became aggravated by some incautious exposure. He, in consequence, had urgent orthopnoea, increased difficulty of articulation, and pain across the forehead, with great drowsiness; but the intellect remained clear. The bronchitis became general; the expectoration puriform and diffuent; and he gradually sank on Dec. 20. He was first treated by mercurials and aperients; under which his jaundice and œdema disappeared. Afterwards, acetate and sesquicarbonate of ammonia, with wine, support, and the application of blisters, were the remedies used.

SECTIO CADAVERIS, TWENTY-ONE HOURS AFTER DEATH.

Brain.—The membranes were thickened, and too opaque; the dura-mater was parchment-like; and there was slight sub-arachnoid serous effusion on the convexities of the hemispheres.

A nucleus of ossific matter, as large as a small nut, existed in the falx major, immediately below the longitudinal sinus.

In the right hemisphere, external and to the upper and outer side of the corpus striatum and thalamus, were four or five small discoloured spots and spaces; some being about the size of a pea, others

larger and more irregular, of a dirty-whitish colour, and consisting of cellular degeneration, surrounded by medullary structure in a state of induration, the cellular portion undulating when immersed in water. None encroached upon the thalamus or corpus striatum.

The sixth nerves were examined near their origin, and nothing particular was noticed. The arteries at the base of the brain were large, patent, and thickened.

The right external rectus oculi muscle was degenerated into mere cellular tissue; the internal rectus being much hypertrophied, thick, and bellied.

The liver was enlarged, and in the early stage of hobnail contraction. Three large gall-stones were found in the hepatic duct. The gall-bladder was full of glairy mucus.

The spleen was hard and contracted, and contained a small apoplexy.

The lungs bore evidence of extensive bronchitis and slight emphysema.

The heart was much hypertrophied, and dilated. The aortic valves rendered imperfect from rigid ossifications.

The aorta was very much dilated, as far as to the end of the thoracic portion: its coats irregular, and thickened with atheromatous and ossific deposits.

CASE 22.

Remote Hemiplegia and Dysentery.

ANNE BUDGE, aged 46, a washerwoman, the mother of three children, was admitted on Oct. 9, 1843. She was of intemperate habits, and had had indifferent health. She had an attack of paralysis three years before, which was supposed to have supervened suddenly during the night; as, in the morning, she was found hemiplegic on the right side. She gradually recovered from this, but never completely regained her power; and subsequently suffered from dyspeptic symptoms and constipation.

During the five weeks preceding admission she had severe diarrhœa, which commenced with rigors and pyrexia; and the evacuations were bloody and mucous, with abdominal pain and tenderness, especially in the left iliac region. On admission, the fæces and urine were passed unconsciously; the tongue was red, and dry; and the pulse 130, very feeble and small.

The diarrhœa was somewhat arrested by the use of cretaceous mixtures, catechu, opium, and hæmatoxylum, with suppositories; but returned with increased severity; and she was found dead in her bed, and cold, on the morning of Oct. 20.

She had evinced no cerebral symptoms since admission.

SECTIO CADAVERIS. *Brain.*—Arborescent injection existed over the convolutions, and there was too much fluid in the ventricles. At about half-an-inch from the wall of the third ventricle, and immediately behind the anterior commissure, in the inferior stratum of grey matter of the corpus striatum, there was a central dark-brown depression, and the surrounding structure was brownish, and slightly corrugated.

There was softening and cellular degeneration, of the size of a marble, in the right lobe of the cerebellum, and in the posterior portion of the corpus dentatum.

There was some plastic albuminous effusion around the commissure of the optic nerves.

Intestines.—The mucous membrane of the cœcum was injected, and excoriated by superficial ulceration: there were scattered points of ulceration in the colon, especially in its descending portion; and the mucous membrane of the rectum presented one rugged, indurated, grey surface of old and recent ulceration.

CASE 23.

Hemiplegia.

SAMUEL WILSON, aged 38, a wine porter in the docks, of intemperate habits, and irritable temperament, was admitted on March 29, 1843. He was of small stature and spare frame, with dark hair and eyes, and pale, sallow complexion; but had enjoyed good health, until five weeks before admission, when he had almost constant pain in the lower part of the occiput, rendering him more than usually irritable. He continued his work, however, until Monday, March 27; when, on getting up in the morning, it was observed that his articulation was thick and indistinct; and he shortly after complained of numbness and loss of voluntary power in the left hand and arm, and presently in the left foot and leg; but his consciousness remained entire. On the 28th he was bled to the amount of eight or ten ounces, which induced faintness; and the bowels were freely opened by aperients. On admission, on the 29th, he lay on his back, with the head inclined to the right side, the angle of the mouth being drawn in the same direction; and there was internal strabismus of the left eye. The left side of the body was incompletely paralyzed: he could just move the limbs, and could feel when touched, but could not discriminate the part touched: the temperature of the left side was lower than that of the right. His articulation was thick and stammering; and he was unable to protrude the tongue, which was white, and rather furred.

Respiration was suspicious, with frequent yawning and drowsiness: the pulse were 66, small and weak: the bowels were regular: the urine clear and copious.

The head was shaved; he was cupped on the nape of the neck; and a dose of salts and senna, with four grains of calomel, were given.

The pain in the head was relieved; the bowels were freely acted on; and he appeared to possess more power over the leg. He was ordered, on March 30, pil. hyd. gr. i. n. et m.; and the bowels were to be regulated by the sulphate and carbonate of magnesia given in mint water. On the following day, the gums were tender, and the pills were omitted. The action on the gums was more decided in a day or two. He was improving, and had more power over the leg; and the movements of the left eye were more natural, and there was less strabismus: the arm, however, continued powerless. The ptialism gradually subsided: the speech, and the condition of the leg improved. He was able, on April 11, to draw the limb up in bed with but slight exertion: the arm, however, was unimproved.

In the following week he caught cold, had febrile symptoms, with pain in the forehead, dimness of vision, and pricking sensations in the right orbit and in the soles of the feet. These symptoms subsided under the use of antimonial diaphoretics, and he again improved, and resumed his aperients, as the bowels were sluggish. In a week or two he was able to walk about the ward, and could just move the left shoulder: sensation was then perfect. Tonics were afterwards prescribed; and he continued slowly to improve, and left the hospital in the middle of May. He could then walk tolerably, but the left leg was moved with a slight dragging: he had but little voluntary power in the left arm, which was supported in a sling: the articulation was slow, and the eye was natural.

CASE 24.

Hemiplegia.

JAMES SULLIVAN, aged 50, a seafaring man, of intemperate habits, and generally enjoying good health, was admitted on Oct. 10, 1842.

Having been drinking and smoking, and becoming slightly intoxicated, he suddenly dropt down, "as if by a paralytic stroke," as he expressed it. He was sensible at the time, and called to his friends to pick him up, as he could not raise himself. He was brought to the hospital, having lost the entire use of the left upper and lower extremities; and he complained of pain in the head. The alvine and urinary secretions were naturally passed, and his special senses were perfect. He was ordered,

Hydrarg. Chlorid. gr. xii. statim.

Haust. Sennæ, post horas 4, si opus. sit.

C. C. nuchæ ad 3xii.

and, on the day following, five grains of blue pill were ordered every night, and half an ounce of dec. aloës comp. three times a-day.

The pain in the head was soon relieved; he gradually regained some power over the extremities; and the gums were tender by Oct. 21: the pills were then omitted. On the 25th the urine was found to be slightly coagulable. On the 31st he managed to sit up for a few hours, was slowly improving, and could hold something in the hand. On Nov. 7 he could walk a few yards tolerably well, and was quite well in general health. On Dec. 13, having continued improving, he could walk pretty well, with the aid of a stick; but the left leg was moved with a dragging gait, and his left arm was still imperfectly used: he was, however, well in health, and he left the hospital.

CASE 25.

Hemiplegia.

CHARLES GELLATT, aged 29, a groom, living in Shoreditch, of rather intemperate and irregular habits, of middle stature, muscular, and plethoric, with dark complexion, short thick neck, and dull, heavy aspect, was admitted on August 2, 1843.

His general health had been good till within the last three years; during which time he gradually lost the use of both hands, and the fingers became contracted. About four days before admission he suddenly fell in an apoplectic fit; was bled and blistered; sinapisms were applied to the feet and neck; and he appeared insensible until two days afterwards: he then became sensible, but was unable to articulate. On admission, the right arm was completely paralysed; the right leg only partially so; sensation remaining perfect in both: the speech was completely lost; and respiration was rather stertorous. The pulse were 90, oppressed, and weak. The thoracic and abdominal viscera appeared healthy; the bowels were open; and the evacuations were under his controul. The tongue was clean; the extremities cold. He was ordered, on Aug. 2, a purgative of jalap and calomel, and to take three grains of blue pill night and morning, and fifteen grains of carbonate of soda, in mint water, three times a-day. He continued in much the same state, but was very drowsy and sleepy; and the pulse continued small and oppressed.

On the 9th he was cupped on the nape of the neck to 3xij.

The drowsiness diminished, and his general aspect improved: the motion in the leg returned gradually; while the arm continued para-

lyzed. The power of articulation was returning; and the gums were sore on Friday the 18th, when the pills were omitted, and the soda mixture continued.

Slight motion became apparent in the arm. He could now use his leg tolerably well; but he complained of slight pain in the head occasionally. On the 28th, a seton was made in the nape of the neck; and on Sept. 4, being then able to walk about the ward, and slightly to raise the arm, he was ordered to take five minims of tinct. ferri sesquichl., in mint water, three times a-day.

His general health continued improving, but there was little further change in the arm and hand. His articulation was slow and imperfect. The use of the leg was almost as perfect as that of the unaffected one; and, on Sept. 25, he left the hospital.

CASE 26.

Paralysis.

WILLIAM WRIGHT, aged 35, a sailor, a native of Newcastle, living in Shadwell, of pretty temperate habits, was admitted on April 12, 1843. He was of tall stature, stout, and well made; and had enjoyed general good health. He received a blow on the head two years previously, which stunned him, and for which he was bled in a hospital; but has since felt no inconvenience therefrom. In October 1842 he had a sort of apoplectic fit, which was attended by loss of sensation and motion on the left side, and complete loss of speech. He was actively treated by depletion &c., and recovered in a few days; but on Dec. 23 he was attacked with a similar fit, from which he only partially recovered, his intellect and speech continuing to be impaired.

On admission, the mouth was drawn to the right, the left side of the face being paralysed: he complained of constant pain in the head, and the speech was very imperfect, so as to be scarcely intelligible. There was dimness of vision, and his memory was much impaired. His temper was very irritable: deglutition was rather difficult: sensation and motion were otherwise entire. The pulse were 76, soft and regular. The bowels confined; appetite good; and the tongue was clean, but protruded with difficulty: urine healthy.

He was ordered a purgative of rhubarb and calomel, and to take the magnesia and salts mixture three times a-day.

The bowels were pretty freely acted on; his articulation slightly improved; and, on the 15th, a blister was applied to the nape of the neck, and half an ounce of compound decoction of aloës was given in mint water three times a-day.

On the 24th, one grain of sulphate of zinc was ordered three times

a-day. He improved gradually, but very slowly: deglutition and articulation, as well as vision, were more perfect; and he expressed himself as feeling better generally. The zinc was gradually increased to five grains three times a-day, and the bowels were regulated by colocyath and calomel.

He continued improving, in every respect; but there was still some difficulty of swallowing and indistinctness of articulation remaining on the 12th of June, when he left the hospital.

CASE 27.

Partial Paralysis.

JEREMIAH BROWN, aged 49, a plasterer, living in London, was admitted on Feb. 1, 1843. He had for many months been out of work; had lived very badly, wanting almost the necessaries of life; and had been, consequently, the subject of much anxiety. His habits of life have been temperate of late years, and his general health good. The bowels have been habitually constipated. Three days before his admission, on getting up in the morning, he experienced a pain in the right eye, and found that he had lost, partially, the use of his arms and hands, and was unable to lift any thing from the floor, &c. His articulation was also interfered with. On admission, his aspect was dull and stupid; the pupils were contracted; and there was some distortion of the face: he could move the arms, but was unable to lift any weight; and his gait was tottering. Sensation in the fingers was impaired, but was not in other parts much affected: articulation was very hesitating; but the intellect was perfect. The bowels were confined; the circulation was weak and languid; the temperature of the skin natural; and the thoracic and abdominal viscera appeared in a healthy condition. He was allowed meat diet, and was ordered an aperient of rhubarb and calomel, and half an ounce of comp. decoction of aloës in mint water three times a-day; and he was cupped on the nape of the neck to ʒviii .

The bowels were freely acted upon, and continued regular; his general health improved; he was regaining the use of the affected limbs; and the face was less distorted. On Feb. 4 a blister was applied to the nape of the neck, and it was dressed with savine ointment. His symptoms, general and local, continued improving, and he was gaining strength; but the tongue was rather coated. On the 7th he was allowed full diet; and two grains of blue pill were given three times a-day. The pulse improved in power, and he gradually regained the complete use of his limbs; his aspect and articulation became natural, and his gait steady; and, feeling pretty strong again, he left on Feb. 14.

CASE 28.

Paralysis and Ramollissement of the Brain.

JOHN KEMP, aged 34, a German, residing in Whitechapel, by occupation a skin-dresser, was admitted on March 23, 1843. He was of middle stature, and spare but muscular make, with dark hair and complexion, of hasty disposition, and temperate habits, and had enjoyed, formerly, pretty good health. His father had been subject to fits. He had had syphilis three years ago, for which he was salivated; and was afterwards subject to vertigo, pain across the forehead, and, for many years, to what he calls rheumatic pains in the head. Nine months before admission he had three transient hemiplegic attacks in one day, affecting the left side; and the features of the face were drawn to the right. These symptoms passed off in a few minutes, but recurred on the following day, when they were of longer duration; after the passing off of which last he was bled copiously. On recovering from the consequent syncope, it was found that the left side was completely paralysed; but, in the course of a few days sensation was restored, and the face regained its natural condition in the course of a few weeks. Motion partially returned; but the power of voluntary motion was very slight. He soon afterwards became affected with frequent tonic spasms of the paralyzed arm, and the bowels were very constipated. He continued in this condition until about seven weeks before admission; when, on awaking in the morning, his wife found him screaming. His face was drawn to one side, and the left extremities were spasmodically extended, but were again relaxed in a few minutes. These spasms had returned several times, almost daily; his memory had become impaired, and his manner childish; and, ten days before admission, he was attacked with sickness, vomiting, pain in the frontal region, and noisy delirium: his power of motion became more impaired, and the bowels more constipated, a week often elapsing without an evacuation. On admission, articulation was very imperfect; memory and intellect were much impaired; and he had intense pain across the forehead, with occasional vertigo. Voluntary motion was almost completely paralyzed on the left side of the body, especially in the lower extremity, and the muscles were rigid: sensation was almost perfect, and reflex action was excitable. He had occasional vomiting; the tongue was moist, rather white; the bowels were confined, and, when open, the evacuations were passed involuntarily: the urine was scanty, and passed unconsciously. The pulse were 95, weak, but regular. A dose of rhubarb and calomel was ordered; and two grains of iodide of potassium, with the decoction and extract of sassa-

parilla, and half-an-ounce of dec. aloës comp., were given three times daily.

On the 24th, the bowels not having been opened, a calomel and colocynth purge was given, and followed by a dose of haust. sennæ comp., without any effect.

On the 25th he was much worse: the pain in the head was very severe: he lay on his back, half comatose, but was easily roused, then answering questions rationally, and complaining of his head; but his articulation was very slow and indistinct: the muscular rigidity continued.

He was cupped to ʒvi. on the nape of the neck; a blister was applied over the spine, between the scapulæ; three grains of hyd. cretâ were given every four hours; and unguent hyd. was rubbed into the axillæ.

On the 26th he was more oppressed: the limbs were rigid, and affected with a tremulous motion: the pupils were contracted, and directed upwards and inwards. He was with difficulty aroused, soon relapsing into a state of insensibility, which gradually increased to complete coma, interrupted by repeated convulsions; and he died comatose early on the following morning.

SECTIO CADAVERIS, THIRTY-ONE HOURS AFTER DEATH.

Head.—The surface of the hemispheres was flattened: on the right there was a large, flattened, fluctuating surface, which, on incision, presented a large cavity, communicating with, and forming part of, the lateral ventricle, which was consequently, as it were, very much dilated. This cavity contained a serous fluid; and the cerebral structure intervening between it and the surface of the brain was degenerated into a loose areolar tissue; whilst the brain around the other parts was softer than natural, but was not cellular. This condition was thought dependent on primary softening, followed, secondarily, by dilatation of the ventricle.

The posterior cerebral artery on the right side was contracted, and thickened, and its canal was impermeable.

The arteries and viscera in other parts of the body were tolerably healthy.

CASE 29.

Paralysis of the Leg.

JAMES MICKLAND, aged 15, a hatter, living in the Borough, of temperate and regular habits, and generally enjoying good health, was admitted on June 21, 1843. About two months previously he was in St. Thomas's Hospital for an inflammation in the side; and had, during the last three weeks, had pain in the head, to which he had

previously been liable; and which, he stated, had recurred monthly. A week before admission, on awaking in the night, he found that he could not use his right leg, and sensation was very much impaired. This continued until the period of his admission; when he complained of pain and swelling in the groin, and the right leg was paralyzed, as regards motion, sensation being very obtuse, and the limb benumbed. The tongue was clean; the appetite indifferent; the bowels regular; and he had occasional vertigo. The organs of special sensation were apparently healthy, and their functions were normal. He was ordered,

Cataplasma Lini inguini applic.

C. C. sacro, ad $\frac{3}{4}$ x.

Hydr. Chlorid. gr. ij. Opii gr. $\frac{1}{2}$. ft. Pil. ter die sumend.

On June 24 the warm-bath was ordered, thrice a-week. The swelling in the groin was then diminishing, and was less painful; but the condition of the leg was unimproved, and he complained of pain in the head, with vertigo; the bowels were regular.

26th. The gums were tender, and rather red and spongy; the glandular enlargement had almost disappeared; the bowels were confined. He was ordered to omit the pills, and to take

P. Magnes. Carb. gr. x. Vin. Colch. m xx. ex Aqua Menth. Pip. ter die.

He now gradually improved, regaining the power of voluntary motion over the affected limb, and sensation became more acute; all traces of the glandular enlargement rapidly disappeared; and, on June 30th, he was able to walk across the ward with the assistance of a stick, and was only occasionally troubled with the pain in the head; gums were still slightly tender. Improvement was progressive, but the appetite was very indifferent; and on July 10th he was ordered,

Sod. Sesquicarb. gr. v. ex Decoct. Cinchonæ, ter die sumend.

The appetite afterwards improved; the bowels were regular; he lost all pain; sensation became normal; and the limb had regained almost its entire motor power on July 17, when he left the hospital.

CASE 30.

Cerebral Disease, with Amaurosis.

WM. CROOKS, aged 27, a somewhat spare man, of moderate height, with light hair and eyes, and generally enjoying good health, married, and of temperate habits. He stated, that about fifteen months previously he had been, in one day, seized with two convulsive attacks, preceded by fainting, and lasting about three quarters of an hour.

On the following day he lost his sight for a few minutes, and continued to do so almost daily, at uncertain hours; and these amaurotic attacks lasted nearly an hour: he had not, however, had an attack for three or four weeks. He had also constantly suffered from giddiness and pain in the head; and had been in the London Hospital twice, where he was cupped, leeches, blistered, electrified, and salivated, but without any permanent relief. After his first attack, his hearing, memory, and reasoning faculties were somewhat impaired. On admission, his countenance was peculiar, somewhat idiotic: the pupils natural, and obedient to light. The bowels open; the appetite good; the tongue moist, rather white; the urine turbid, with a deposit of lithates. The cardiac sounds heard were over an increased space; the pulse 72, regular, and rather hard: respiration natural. He complained of trembling of the limbs and a sense of numbness in the left arm, and pain in the left leg, with the daily recurrence of amaurosis. He was admitted on Nov. 17, 1841, and was ordered low diet, and to take

Mist. Magnes. c̄ Magnes. Sulphat. bis die.

Pil. Hydrarg. gr. vi. Ext. Hyos. gr. v. omni nocte.—And a seton was inserted in the neck.

On the 22d the heart's action was very irritable, and there was considerable tremor of the hands. The bowels were open; the seton discharging freely; and he had only had amaurosis once since admission. The face was flushed; the skin hot; and the pulse rather sharp. He was bled to eight ounces, and the medicines continued. The blood drawn was neither buffed nor cupped; the trembling had diminished; the heart's action was less excited; the pulse 96, rather weak; the bowels open. Six drachms each of dec. aloës co. and mist. camph. were substituted for the other aperient mixture, and the pills were continued.

On the 27th he had an attack of amaurosis, which lasted about an hour, and which was preceded by pain in the head, and giddiness.

On the 29th the bowels were rather freely open: the mixture was ordered once a-day only, and the pills were prescribed to be taken night and morning. He had no return of amaurosis till Dec. 9th, when it was attended by pain in the head; but he was, on the whole, better. The gums were tender; and the pills were diminished to one dose daily, and completely omitted on the 13th, and five grains of pot. iodid. ex julepo menthæ were ordered three times daily.

On the 15th, the gums and mouth being very sore, gargarisma sodæ chlorinatæ was prescribed. The seton continued to discharge freely.

On the 18th he complained a good deal of his head; the tremor of

the hand was rather increased, and the heart's action was more excited. He was cupped between the scapulæ to ten ounces, from which he experienced considerable relief.

On the 22d he had another return of the amaurosis; but otherwise was manifestly improving: his aspect was better; his intellect less dull; and his manner more lively.

On the 10th of January 1842 the seton was removed, considerable local irritation having been induced.

He was very weak, but continued to improve; and was ordered, on January the 15th,

Inf. Gentian. Co. ʒi. Dec. Aloës Co. ʒss. ter die; with a dose of Haust. Sennæ in the morning, as required.

On the 28th he was attacked by an epileptic fit, followed by loss of vision, of two hours' duration; and on the following morning he had another and similar attack, lasting three hours. The pupils were contracted, but varying.

On the 29th he complained of pain in the head, and the tremors were more severe: another seton was introduced into the nape of the neck, after which he was much easier, and had less trembling; and improved uninterruptedly, without any return of the amaurosis till the 20th of February. On this day he had a return of the amaurosis, and twice on the morning of the 22d, when he complained of pain in the head, with heaviness and dimness of vision following the subsidence of the blindness. The seton had been dressed with the ceratum sabinæ, and the bowels regulated by an occasional purgative. The pulse were then 120, and irritable. He was ordered to take zinci sulph. gr. ij. ter die: after which he gradually improved, the tremors were much diminished, but the heart's action continued irritable. He had no return of the amaurosis; and, on March 7th, left the hospital, improved in health, and having lost his pain and numbness; the tremor still remaining in a slight degree.

CASE 31.

Apoplexy—Ramollissement.

THOMAS CLEGG, aged 63, a widower six months, of pretty temperate and usually regular habits, having enjoyed general good health, and not having suffered from head-ache, was seized, whilst in a house of ill-fame, immediately after coition, with a fit of apoplexy; and was brought into the hospital on April 30th, at 1 o'clock A.M., when he was quite insensible, and had lost all voluntary power. His breathing was stertorous; the right pupil was much dilated; the left was contracted; the pulse full and bounding. Thirty-three ounces of blood

were drawn from the temporal artery; after which the pulse continued full and bounding. A pint of urine was withdrawn by the catheter, which met some obstruction from a rather firm stricture. No medicines were given, as the introduction of the finger beyond the epiglottis produced no sensation or attempt at deglutition. He continued in the same comatose state for eight hours, when he died.

SECTIO CADAVERIS.—The body was of moderate size, and the frame spare. The surface of the brain was dry, pale, and dull, and the convolutions flattened. A clot of blood, the size of an egg, was found in the left ventricle, the outer wall of which was much lacerated. A laceration extended also into the right ventricle, which contained a considerable quantity of reddish serum. The roof of the left ventricle, and the parts around the laceration, seemed translucent, soft, and somewhat ecchymosed. Four or five small truncated arteries were found towards the outside of the left corpus striatum, and opening into the laceration. The arteries at the base of the brain were rigid and patent. The left ventricle of the heart was thick and strong; and the aorta was dilated, atheromatous, and ossific: the other arteries examined were wide, thick, firm, and unequal. The liver was slightly granular. The kidneys were small, very firm in structure, and granular on the surface; each having ten or eleven cysts, and granular deposits of strumous-looking matter in the cortical portion.

CASE 32.

(Hysterical) Epilepsy.

ANNE HILLS, aged 16, a housemaid, of middle stature, with dark hair, light eyes, and florid complexion, rather stout, and healthy-looking, always residing at Clapham. She had menstruated about a year, the catamenia recurring once a fortnight, with leucorrhœa during the intervals: she had otherwise had good health. About three weeks before admission she had a fit, apparently of an epileptic character. She had, during the previous week, been troubled with sickness after taking food; and two days previously to the attack she had numbness of the right foot, not however interfering with her occupation. At the time of attack she was suddenly seized with a violent pain of the head, such as to cause her to scream; and she recollected having fallen down immediately afterwards. This occurred in an out-house, where she was alone and unseen. She remained, it appears, insensible for an hour; at the end of which time she walked into the kitchen, when her fellow-servants observed her hair and garments much dishevelled and torn, and she was apparently unconscious to surrounding objects. She continued in this

state for two hours, when she regained her sensibility; but felt pain in the head, and aching in the limbs, till the following morning. She had a similar fit afterwards, which was preceded by numbness of the hand and arm. On both occasions it was just before the appearance of the catamenia.

On admission, on March 28, the heart's action was very irritable; the pulse 100, and compressible. The thoracic and abdominal viscera were apparently healthy; the bowels were regular; the tongue clean and moist; appetite much impaired; and she slept badly at night.

Capiat Zinci Sulph. gr. ij. ter die

Tinct. Valerian. Ammon. ʒss. Tinct. Assafoetid. m xij. Mist. Camph. ʒi. ter die

She continued much the same in her general symptoms; and the zinc was gradually increased to gr. viij. ter die, without sickness or any untoward symptoms. The catamenia appeared about ten days after her admission, without any symptoms premonitory or otherwise of the fits; and she was therefore presented on April 10.

CASE 33.

Epilepsy, followed by Paralysis.

ANNE WALLIS, aged 7, a delicate-looking child, of healthy parents, with large, somewhat mishapen, head, and of dull intellect, living at Walworth, was admitted on April 26, 1843. She had long been subject to pain in the head; and six months before she had a fit, leaving weakness of the right side, from which she recovered gradually. About a week before admission she complained much of pain in the head, was unusually dull, and she fell down several times during the day. On Saturday the 22d she had an epileptic fit, lasting an hour, during which she was quite insensible; and on her recovery it was found that she had lost the use of the right side, which had since returned in a slight degree.

On admission, her aspect was dull and heavy: she had pain in the head, vertigo, dimness of sight, and there was partial paralysis of the entire right side. The pulse were 120, small and weak; the thoracic and abdominal viscera appeared in the normal condition; the tongue was clean; the appetite bad; and the bowels confined.

She was ordered, hyd. c̄ creta, gr. iij. ter die sumend.; and a dose of haustus sennæ.

On the 29th she had less pain and vertigo, and could use the right arm better; the appetite was improved, and the bowels were regular. The hyd. c̄ cretâ was ordered to be taken once a-day only, and was omitted on May 1, when a drachm of vin. ferri in cassia-water was

given three times daily. She continued improving; could, in the course of another week, use her limbs pretty well; but the right leg dragged somewhat during progression: her general health was much better, and vision improved.

On May 8, five grains of sesquioxide of iron was substituted for the vin. ferri; and this was continued until the 15th, when she was quite well, and had recovered the use of her limbs, with the exception of a little dragging of the right foot during walking. She left the hospital on that day.

CASE 34.

Epilepsy, with Albuminous Urine.

JOHN KNOWLES, aged 62, a brush-maker in Thames-street, whose case was recorded as one of renal anasarca in a former Number, was re-admitted on April 19, 1843. He was light-complexioned, leucophlegmatic, of pretty temperate and regular habits, and having usually had good health till the commencement of the renal disease. No other branch of his family had had epilepsy or cerebral disease. Since leaving the hospital, in Sept. 1842, the urine had continued albuminous, and slight œdema of the ankles had remained; but he had pursued his employment until March 16, when he was suddenly seized, while at work, with vertigo, sickness, and cold sweats; and a fit, apparently of an epileptic character, followed, lasting about three quarters of an hour, and being followed by sopor. Similar fits recurred frequently; and, on some occasions, as often as three times a-day, the last having occurred on the morning of admission: his aspect then was dull and heavy. The conjunctivæ were raised by submucous watery effusion, and there was slight œdema of the legs. The head was well formed, memory impaired, and vision indistinct: he had no pain, but vertigo on stooping, and frequently had vomiting after the fits. The bowels were regular; the tongue was rather injected, with thirst and loss of appetite. Slight bronchitic râles were heard in the chest, which was resonant and well formed. The pulse were 70, and rather labouring. The urine copious, sp. gr. 1012, pale, and very coagulable. He was ordered low diet, and, April 19,

C. C. nuchæ, ad 3x.

Mist. Salina Potassæ Citratæ, 4tis horis sumend.

The fits recurred. A blister was applied to the nape of the neck, on April 21. He had but one slight fit afterwards, which was on the 22d, but some vertigo remained: the pulse became freer and more frequent; his head seemed clearer; but vision remained dim.

* April 1843, p. 279.

Under the use of gentian, sulphate of zinc, and nitric acid, he improved for a time; but, about May 10, he was troubled with hiccough and rigors; the legs were become œdematous and painful, and vesications had formed in some parts; the urine was much less albuminous; the pulse small, feeble, and frequent; and he was much weaker. Poultices were applied to the vesicated parts, and julepum potassæ citratis effervescens was ordered. The hiccough continued for some days. On May 30 he had slight incoherence on awaking, with heaviness and frequent nausea. He continued getting weaker; the urine diminished in quantity, and was less albuminous; troublesome cough, with slight expectoration and great dyspnœa followed; and he gradually sank on June 13.

There was no necroscopic inspection.

CASE 35.

Convulsions, with Albuminuria.

WILLIAM CLEMENTS, aged 32, a strumous-looking man, light-complexioned, of temperate habits, and by occupation a weaver at Bethnal Green, was admitted on Feb. 16, 1842. He had enjoyed good health till five months previously, when he had pain in the head and sickness, for which he was brought under the action of mercury in St. Bartholomew's Hospital, without relief. About a month before, his vision had become dim, and his eyes, especially the right, amaurotic. Ten days before he had been seized with convulsions, which occurred at short intervals during twenty-four hours: at the expiration of which time his consciousness, which had been lost during that period, was regained. He was for this attack bled, purged, and blistered. During the two or three days succeeding this attack, he passed scarcely any urine; but it afterwards was more copious, and so continued.

On admission, he complained of a dull heavy pain extending from the forehead to the vertex, and was partially amaurotic. The skin was moist and cool; the ankles were œdematous; and the wrists and face had been, but were not so then. The urine was very albuminous, its sp. gr. being 1009. The bowels were open; the tongue clean; the pulse 66, small and compressible. The sounds of the heart were loud and clear. He was ordered, on Feb. 10,

P. Jalap Co. ʒij. omni aurora sumend.

Mist. Salina Potass. Citratis, 4tis horis sumend.

C. C. nuchæ ad ʒx.

He experienced partial and temporary relief from the cupping: the bowels were freely acted on; and the œdema diminished.

On the 28th the pains in the head were aggravated; the bowels were rather confined; the pulse were 110, small, and rather sharp. He was again cupped, and a purgative of rhubarb and calomel was given. The head was again but temporarily relieved. A blister was applied, and subsequently cupping on the nape of the neck was had recourse to; and the bowels were regulated by the use of the compound jalap powder and senna mixture. He continued the same in most respects; but the œdema increased, and, on March 23, extended to the arms. He was then complaining of pain in the head, aggravated by the slightest constipation, and he had frequent nausea and vomiting, with dyspnœa: the pulse continued feeble, and was frequent. The saline mixture was alone continued; but the bowels again became constipated: and the supervention of severe dyspnœa, with dulness on percussion at the base of the lungs, and the existence there of the subcrepitant râle, led to the suspicion of œdema of the lungs. A blister was applied to the scrobiculus cordis and right hypochondrium; and one drop of Croton oil, with ten grains of compound gamboge pill, were given, and the mixture continued.

On March 30 the bowels had been freely acted on, and the dyspnœa was much relieved: the pills were repeated, with a beneficial result; and the œdema of the lungs gradually disappeared, and his general symptoms improved: the anasarca, however, increased. The scrotum and penis were acupunctured, with relief, on April 10.

On April 22 dyspnœa re-appeared, and became very severe; and œdema of the lungs was manifested. These symptoms increased, and the anasarca became very extensive, but was temporarily relieved by elaterium, dec. scoparii comp. with spt. juniperi comp. and spt. æth. sulph. comp., and the application of a blister to the chest; but the distress again increased; he became gradually weaker; orthopnœa and abdominal tenderness were then the predominant symptoms; and he died on May 6, without the recurrence of any cerebral symptoms. The urine continued throughout very albuminous; and the specific gravity varied from 1009 to 1015.

SECTIO CADAVERIS—The whole body was very œdematous.

Head. The arachnoid was very opaque, and there was slight subarachnoid effusion.

The pleuræ were unequally and scantily scabrous, with recent fibrinous deposits; and filmy clots were floating in a pint of dullish serum on either side. The lungs seemed compressed, œdematous, and somewhat hepatized.

The pericardium contained marks of recent inflammation: scabrous layers, soft bridles, and recent adhesions, with a little fluid. The

heart was rather dilated and enlarged: the arteries were too thick and firm.

The peritoneum contained a serous fluid, with scabrous surfaces, and soft, yellowish, fibrinous deposits.

The kidneys were small, light-coloured, and hard: the surface coarsely granular, and the cortex shrunken, and here and there sprinkled with small, creamy, grain-like deposits.

CASE 36.

Spinal Meningitis.

THOMAS MONUMENT, aged 19, a poulterer's assistant, living in Shore-ditch, of small, but well-formed frame, and of temperate and regular habits, having generally had good health till eighteen months before his death, when he was treated in Guy's Hospital for pleurisy: this was followed, immediately after leaving the hospital, by scarlatina, from both of which he recovered; but he subsequently complained of wandering pains in the neck and loins, and general *malaise*. Three months before his last admission had erysipelas of the face, and was confined to his bed for a few days, but perfectly recovered in about a month; at the expiration of which period he became an out-patient, the pains continuing in the back, neck, and loins, and being regarded and treated as rheumatism, without relief. On the Friday before admission the pains became very much aggravated in the neck, back, and loins, causing him to scream violently, with great restlessness, alarm, and dread, if any one approached to touch any part of his body. These symptoms were more severe on Saturday; and on the following morning, May 7, he was admitted, with symptoms of fever, and complained of the pains in the neck and loins, which were less severe; had great disinclination to turn in bed; and, on being raised in bed, maintained almost a tetanic rigidity of the muscles of the neck: but these symptoms were not very marked until two or three days afterwards. On the Wednesday he lost the use of his arms for a time, and then the pains left him, but became again severe with the return of motion. On Thursday, convulsions came on; he had foaming at the mouth; the features of the face were distorted; the hands were clenched, and he was insensible: the tonic rigidity of the neck continued. He had frequent recurrence of the convulsive attacks during the next day, when he died, trismus having been present during the two hours preceding his death.

SECTIO CADAVERIS.—The skin, generally, and conjunctivæ, were slightly icterode. On opening the head, the veins and sinuses were seen large and congested; and on dividing the spinal cord, just below

the medulla oblongata, some puriform-looking fluid exuded from, apparently, the centre of the cord, the cut surface of which was looser in texture than natural.

The spinal canal being opened from behind, there was some slight ecchymosis between the muscles, and extravasation of blood, with effusion of lymph, between the vertebræ and dura-mater: an effusion of lymph, and some puriform albuminous matter, were also seen between the arachnoid surfaces, and beneath the arachnoid itself, rendering these membranes slightly adherent, and opaque. This opacity was seen especially in some spots, and evidently of no very recent character. These appearances were most observed at the fourth and fifth cervical vertebræ.

The lungs were almost universally adherent, and, posteriorly, they were congested; and the edges were somewhat emphysematous.

The pericardium, both on its close and reflected portions, presented some ecchymotic spots.

The surface of the liver was rather pale; the edge rather rounded; and some yellowish spots, of the size of half-a-crown, surrounded by an areola of darker vascularity, were observed: these extended to the depth of half-an-inch. On incision, the structure was yellowish, with an occasional mottling of florid red. The lobules were universally of a pale yellow colour; and, in those parts which were of a brighter red hue, the interlobular fissures were the seat of florid vascularity. The organ was lacerable, and tore with a granular appearance. This was regarded as an inflammatory condition of the liver.

The spleen was lacerable, and soft in texture.

The kidneys were coarse.

The lining membrane of the stomach was congested in patches.

The glandulæ peyeri and solitariæ were large and prominent towards the lower end of the ileum.

The peritonæal surface of the bladder was corrugated, thickened, and the seat of ecchymosis, which was also observed internally, in the submucous tissue.

CASE 37.

Tetanus.

JAMES SMITH, aged 27, a stableman and labourer, living at Walworth, was admitted on Feb. 15, 1843. He was of middle stature, and spare frame, light complexioned, and of unhealthy aspect; of temperate and regular habits, having, during the last year, been a practical teetotaler, and having drunk largely of water. He had lived well, and had good health; but fractured his leg nine months before, when it united rapidly and favourably. In the first two or three days of

February he had been engaged in sifting cinders in an out-house and exposed to the cold, though he did not feel the effect of it. On Tuesday, Feb. 7, he had felt a tingling in the fingers, and found that he had chafed the skin from the ring-finger of one hand, and from the middle finger of the other. The tingling soon passed off; and he took no further notice of it until Feb. 9, when the tips of the fingers were dark-coloured, and he next observed that the toes were similarly affected: the discoloured parts were occasionally the seat of pain at night. He felt generally ill; and continued getting worse until Thursday, Feb. 16, when he was admitted.

His countenance was then peculiar: the eyes rolling, but occasionally becoming fixed, with a hurried and anxious stare. The features were contracted, the angles of the mouth being drawn outwards, and giving a sardonic grin. The masseter muscles were tense; and he could but slightly open the mouth, and with difficulty protrude the tongue, which appeared moist, and rather white. The muscles of the posterior part of the neck were also rather tense; and the patient complained of a similar sensation, which he first felt on the morning of admission. He was free from pain: the intellect was clear, and he was not apprehensive of danger. The skin was moist: the extremities and body of the natural temperature. The action of the heart and the pulse were weak, but regular, 100. The tips of all the fingers, excepting the left index, were black and gangrenous; some being shrivelled and dry: the abraded surfaces had ulcerated, and were gangrenous; and the flexor tendon was, in one part, exposed, and surrounded by sloughing cellular membrane. The toes were purple and livid, and two of them were becoming dry and shrivelled.

Feb. 16. Cotton wool was applied to the feet: he was ordered to take a pint of porter daily; and decoction of bark with ammonia, and five minims of tinct. opii, were given every four hours.

17. He had slept well: the trismus was increased; the muscular spasm had extended to the back; and he was unable to sit up. The hands and feet were cold: the bowels open: urine high-coloured: pulse 110.

18. About 5 o'clock A.M. he had a convulsion, so violent as to throw him off the bed. A similar but less violent one followed at 10; and, when seen at 11, he was in a state of partial opisthotonos. The muscles of the abdomen were, for the first time, found rigid: those of the extremities were unaffected. The muscles of the face were spasmodically moved; attempts to speak increased their spasm; and articulation was mumbling and indistinct: he was quite sensible.

At half past 12 he had another fit, and was in a state of perfect opisthotonos: the face was livid: the pulse was imperceptible:

respiration laboured, and stertorous. These symptoms passed off as the spasm disappeared, and he relapsed to his previous condition. He was ordered, at one o'clock,

Ext. Cannabis indicæ, gr. iv. ex Mist. Acaciæ, ʒij. 2dis horis sumend. ; and ʒvj. Port Wine.

He took two doses ; and was, at seven, much the same, having had another paroxysm at half-past six. The medicine was then ordered to be taken every hour. He had another paroxysm at half-past twelve. After this, no more medicine could be given, as the attempt excited fearful tetanic spasms of the muscles of the face and trunk, while those of the extremities were more irregularly convulsed. Similar symptoms to those above described were observed during the paroxysms, but were more severe, and the heart's action was apparently arrested for some seconds. He was insensible during the paroxysms, but quite sensible in the intervals. He had three recurrences of the paroxysms after half-past 12, each successive one being more severe ; and he died in one of them at 4 A.M. of Feb. 19.

SECTIO CADAVERIS, THIRTY-THREE HOURS AFTER DEATH.

Head. Filamentous and close adhesions existed between the arachnoid surfaces : the cineritious portion of the brain was darker than natural, and of a rosy tint, and firm. The white central portion of the cerebellum was mottled, and of a reddish white colour. In both ventricles there was a small band of firm adhesions, extending from the corpus striatum to the roof of the ventricle.

The spinal veins were much congested ; and from those forming the spinal plexus flowed a large quantity of grumous blood. The grey portion of the cord and medulla oblongata was darker than natural, and was also reddish.

There was ecchymosis beneath the fascia covering the psoas magnus, and laceration of a few muscular fibres.

Stomach. Its pyloric extremity was much contracted ; the mucous membrane at the cardiac end was slightly digested.

The liver was rather soft, dark, and slightly mottled.

The pleuræ contained each about an ounce and a-half of sero-sanguineous effusion. The lungs were congested, and slightly cedematous, posteriorly. The kidneys were much congested ; and the bladder contained a small quantity of coagulable urine.

The heart was firmly contracted on the left side : the right side was more flaccid.

CASE 38.

Paraplegia—Death.

ELIZA HILLERY, aged 21, single: a maid-servant, having always resided in London: of rather short and small stature, with dark hair and eyes, pale aspect, and nervous temperament. Had menstruated regularly since the age of 16; and generally enjoyed good health. She attributed her present condition to the effects of an accident a year before, when, after falling down one stair, she was unable to rise, and was carried to her bed. The parts injured seemed to have been the left ilium and the lumbar vertebræ. She was unable to move for a fortnight; then gradually improved; and, at the end of two months, was pretty well. She had perfect use of the lower extremities during the above period. Eight months subsequently, and two months before admission, she experienced aching pains in the legs, which continued to increase for five weeks; at the end of which period her legs "gave way under her," and she felt very weak in the loins, and, at the same time, lost the entire use of the lower extremities; in which condition she was on admission, three weeks afterwards, April 13, 1842.

She then had an anterior curvature of the spine, beginning at about the tenth dorsal vertebræ; and a slight apparent depression of the three lower lumbar vertebræ and of the sacrum. The urinary and alvine evacuations, especially the former, were passed with difficulty and straining efforts. The urine was acid, even after standing at a medium temperature for twenty hours, natural in quantity, high coloured, specific gravity 1020, and not albuminous. The thoracic and abdominal viscera appeared healthy. The pulse were 96, small and rather sharp. The bowels were open; the tongue clean, and moist; the appetite indifferent; and sleep much interrupted. She was ordered middle diet.

April 13. Tinct. Ferri Sesqui. m xv. ex Inf. Calumb. ter die.

Pil. Aloës c Myrrhâ, gr. v. o. n.

On the 15th the tepid hip-bath was prescribed; after which she felt considerable twitchings in the legs: and on the 20th the use of the electric sparks was added to the previous treatment. The twitchings increased, especially from the spine to the left foot; and her urine was passed without straining. She improved; and on the 30th could raise her foot three inches from the bed, and had more sensation, especially after the use of electricity.

On May 9 the warm bath had been suspended for three days, and she was not so well: her sensation and power of motion were more impaired. She was ordered,

Fonticulus region. dorsal. inferiori.

Zinci Sulphat. gr. ii. ter die.

Pergat in usu semicupii et scintillar. electric.

She afterwards improved slightly in her general health, but did not regain any further sensation or motion. On the 18th, the zinc having been increased to gr. iij., she was troubled with sickness, for which effervescent were ordered, and the pills were omitted. The sickness subsided, but she felt very weak, and had no appetite. She was ordered, on May 23,

Quinæ Disulph. gr. ij. Acid. Sulph. dil. m v. Infus. Aurant.
Comp. ℥ij. t. d.

She continued to lose strength, and emaciation proceeded rather rapidly.

On May 30 she was ordered,

Ammon. Sesquicarb. gr. v. Tinct. Cinch. Comp. ʒfs. Dec.
Cinchon. ʒi. t. d.

She now began to pass the urinary and alvine evacuations involuntarily; emaciation progressed gradually; and she became feverish.

On June 11 all medicines were omitted, and endeavours were made to support her strength by the use of wine, porter, and mutton-chops. The feverish symptoms passed off; she gradually grew very weak, fainting on the least exertion; and was ordered, June 15, julep ammonia at intervals, with an occasional draught of tinct. hyoscyami and camphor mixture.

She gradually lost all power of motion and sensation in the lower extremities, and died on July 3, 1843.

SECTIO CADAVERIS, TWENTY-SEVEN HOURS AFTER DEATH.

Both lungs were studded with miliary tubercles.

Spine. There was considerable venous congestion in the spinal veins, with slight projection forwards, to the extent of about two lines, of the sixth dorsal vertebræ; but in the absence of disease in the surrounding soft parts, it was considered to be of little importance.

There was no evidence of disease in the spinal marrow.

Brain. Several scrofulous tubercles, about the size of peas, some being softened in the centre, others of uniform consistence, were found in the surface of each cerebral hemisphere, and apparently originating in the pia-mater, and projecting into the adjoining grey matter: two or three of them were found imbedded in the grey matter of the hemispheres; one more especially was noticed in the medullary fibres, above and to the outer side of the corpus striatum: the more

external of these appeared to be enveloped in vascular membrane. There was no softening of the brain around them.

Cerebellum. A tubercle, as large as a small nut, with an irregular raspberry-like surface, was found upon the inferior and outer part of the cerebellum, having originated in the pia-mater. The two layers of arachnoid were adherent, and the other portion was imbedded in the cerebellum, so as to implicate some of the medullary fibres extending from the pons Varolii. One or two others were found situated superficially in the grey matter, and originating in the pia-mater.

CASE 39.

Partial Paraplegia.

JOSEPH ABBOTT, aged 3 years and a half, a tolerably healthy-looking child, with large head, and of healthy parents, was admitted into the Clinical Ward, on Jan. 25, 1843. His general health had been pretty good; but at the age of eleven months he had suffered considerably from teething; soon after which period the left arm and both legs became quite paralyzed. He was under medical treatment for six months; at the end of which period the left leg alone remained paralysed, and it had continued so to the time of admission, the power of flexion and extension of the toes alone-being retained. He had the measles when two years of age, and a slight attack of "fever" six months before admission.

On admission, the left leg was wasted, and, with the exception of slight flexion and extension of the toes, it was paralyzed: there was tenderness, on pressure, upon the two or three lower dorsal vertebræ. The pulse were 120, sharp, but weak; the tongue was clean and moist; the bowels rather relaxed; the evacuations slimy; and the appetite was pretty good.

Six leeches were applied over the seat of tenderness, and an aperient of scammony and calomel was given.

The bowels were freely acted on, and the evacuations assumed a more healthy appearance: the leeches bled freely.

On the 28th a blister was applied over the tender part of the spine with relief to the tenderness; the bowels, which had been rather confined, were regulated by the scammony and calomel powders, and by castor oil; and the evacuations were more healthy in appearance.

No amendment in the affected limb followed: the bowels were regulated by a drachm of confection of senna every morning; and, without any improvement, he continued in the hospital until Feb. 8, when he was removed.

CASE
OF
POISONING BY OPIUM.

BY ALFRED S. TAYLOR.

Death of a Child from Infusion of Opium—Symptoms—Post-mortem Appearances—Chemical analysis—Solubility of Opium in water—Remarks on the chemical processes for detecting Morphia and Meconic Acid, with experiments.

ON the 29th November last I was requested by Mr. Duke, formerly a pupil at Guy's Hospital, to investigate the circumstances connected with the death of a male child aged fourteen months. There was a strong suspicion that the child had been poisoned by opium. I received from him, for special examination,—1. a six-ounce bottle, containing six drachms of a brown mixture, with a large quantity of brown sediment, smelling strongly of opium; 2. the stomach, intestines, and kidneys of the deceased, secured in a bladder.

The history obtained was as follows:—The child was tolerably well on the morning of the 26th, when it was seen by Mr. Duke. It had had a slight attack of diarrhœa, from which, however, it was considered to have recovered. On the 27th, at half-past seven o'clock in the morning, it was again seen by Mr. Duke, and he then found it labouring under coma, with stertorous breathing: it was perfectly unconscious; there was a thick film over the eyes; and there were slight convulsions of the hands. He considered the child to be in a hopeless state. Every attempt was, however, made to recover it, but all efforts proved unavailing; and after lingering in a state of insensibility, it died at two o'clock on the afternoon of that day. A report had gained circulation that some medicine had been given to the child, the night before its death, in order to cause it to sleep. This was strongly denied by the nurse in attendance on the deceased; but on searching her room, the bottle, containing the mixture handed to me for analysis, was there found concealed.

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The inspection of the body took place on the 28th, about twenty-four hours after death. It was not emaciated; and, externally, there were no particular appearances, if we except a few livid spots on the skin of the abdomen, back, and genitals, as also on the upper part of the thighs, sides and back of the neck. The eyelids were open; the eyes sunk into the orbits; and their transparency gone: the child, it seems, had died with its eyes prominent and open. The pupils appeared contracted, but the condition of the iris was not particularly noticed during life. The viscera of the chest were quite healthy: there was no mark of effusion, or of any organic disease. The right cavities of the heart were congested, and the lining membrane of the organ was thought to be somewhat opalescent. The viscera of the abdomen were also healthy, except the kidneys, the cortical structure of which appeared to have undergone some change from disease, although this was of very slight extent, and had evidently had no influence on the illness and death of the child. The peritoneum presented, in some parts, patches of a milky whiteness; but there was not the least appearance of inflammation or effusion. The stomach was perfectly healthy; the mucous membrane was raised into numerous rugæ, but there was no trace of inflammation or disease in any part. The cavity of the organ contained about a teaspoonful of a white viscid liquid, apparently consisting of milk and mucus in a semi-digested state. There was no farinaceous or any other food present, nor was there the least smell of opium. The absence of any farinaceous food was demonstrated by the negative effect of iodine water. This liquid was collected and reserved for analysis. The intestines were found quite healthy. On opening the duodenum and jejunum a small quantity of liquid, similar to that contained in the stomach, was observed: this was also collected and set aside for analysis. In the cranium, the blood-vessels of the brain were found much congested; but there was no effusion or extravasation of blood or serum. In all other respects the brain presented its usual healthy characters.

Analysis of the Mixture.—The quantity contained in the bottle, and separated from the dregs, amounted to six fluid drachms: it was of a deep red-brown colour, and smelt very

strongly of opium. It appeared to consist entirely of an infusion of opium in water. There was no trace of alcohol, nor of any other ingredient in it, and the dregs consisted, apparently, of finely-powdered opium, free from any admixture of mineral matter. In order to determine how far the water had extracted the soluble parts of the opium from the powder, the residue was digested in half an ounce of warm water, and allowed to remain for a period of three days. This liquid was then filtered, and it was found to have acquired only a faint yellow tint, with a slight smell of opium. Meconic acid was easily detected in it, but there was scarcely any indication of morphia. On adding nitric acid, the result shewed that the water used in making the original infusion had abstracted nearly the whole of the soluble portion of the opium from the powder.

The mixture, filtered from the residue, was found to be neither acid nor alkaline, but it had an intensely bitter taste. It was clear, though highly coloured. 1. To one portion of this liquid, slightly diluted, strong nitric acid was added, and the deep red colour, indicative of the presence of morphia, speedily appeared: this colour was not discharged by one or two drops of the protochloride of tin, whereby the red colour given by nitric acid, in a solution containing morphia, is known, from the action of that acid on a solution containing brucia. 2. To another portion, a saturated solution of neutral sesquichloride of iron was added guttatim, when the liquid instantly acquired a deep red colour. This colour was not discharged by the addition to the liquid, in some quantity, of a solution of chloride of gold, or bichloride of mercury: hence it was inferred that this effect was due to the presence of meconic acid. On adding to the same portion of liquid concentrated nitric acid, the deep red colour of the meconate of iron disappeared, and was replaced by the bright red given by that acid in liquids containing morphia. The results obtained by these tests, together with the peculiar odour, left no doubt that the mixture was a strong solution of opium in water. The evidence of the presence of opium was so decided, that it was not considered necessary to decolorize the liquid by animal charcoal. The precaution had been taken, of so far diluting it as to prevent its colour from concealing the action

of the tests. Besides, it is advisable, if possible, to avoid the use of animal charcoal in all cases where the quantity of opium present is small, because a portion of the meconate of morphia is likely to be removed in discharging the colour. It has been especially remarked by chemists, that animal charcoal absorbs meconic acid, and cannot be used to decolorize it. The iodic-acid test was not here employed to detect morphia, as this test is never satisfactory in its results, unless we have a portion of the pure alkaloid, or its salts, on which to operate: with brown infusions it commonly produces only a dull green tint, as it did in this instance.

An attempt was now made to procure the meconic acid and the morphia separately, by adding to a large portion of the liquid a solution of acetate of lead with a few drops of acetic acid. A faint cloudiness only resulted from the production of a minute quantity of meconate of lead; but the precipitate was too small to allow of its being collected for examination. It therefore became an object, if possible, to determine, by some other process, the quantity of opium contained in the mixture.

Twenty-five grains of the clear liquid left, on evaporation in a sand-bath, 0.4 gr. of a brown residue (opium). This would give a proportion of about 0.9 gr. for each drachm or teaspoonful of the mixture. The quantity dissolved could not certainly be estimated at less than three quarters of a grain to each drachm. In order to determine how far this result was borne out by experiment, the plan suggested by Dr. Ure as the only available method under the circumstances was adopted, *i. e.* of comparing the depth of tint given by a solution of sesquichloride of iron in a portion of the mixture, and in a like quantity of an artificial opiate liquid made to resemble it. It was found that ten drops of the pharmacopœial tincture of opium, mixed with twenty-five drops of distilled water, gave, with the iron-test, when poured off clear, a depth of tint (owing to meconate of iron) exactly similar to that given by an equal quantity of the original mixture. According to the known strength of the P. L. tincture, this quantity would have contained 0.53 gr. of opium; and in a fluid drachm of such an artificial mixture there would be contained 0.9 gr. of opium—a proportion exactly equal to that derived from an

examination of the infusion which was alleged to have caused the death of the deceased.

This method of determining the quantity of opium by the depth of tint given by meconic acid is not very accurate, although the result here corresponded closely to that obtained by the evaporation of the original infusion. According to the late analyses of Mulder, the proportion of meconic acid in opium bears no direct ratio either to the quantity of morphia, or to the sum of the various bases contained in it. In one specimen of Smyrna opium the morphia was to the meconic acid as 10·8 to 5·1: in another, only as 2·8 to 7·2. This great difference is reduced, when we compare the weight of meconic acid with that of all the bases; but still it is obvious that the strength of particular specimens of opium cannot be safely determined by this mode of using the sesquichloride of iron. It shews how much meconic acid is present, but it does not indicate the quantity of morphia or other alkaloids: the specimen yielding the least depth of tint may actually be richer in these than that which is most deeply coloured. This test, as will be seen hereafter, is admirably adapted for detecting minute traces of opium, but it is not fitted for determining the quantity present. In simple mixtures this may be better determined by evaporating a known weight.

Analysis of the contents of the Stomach.—These amounted to one fluid drachm of a white, thick, viscid liquid, without any particular smell, and resembling the farinaceous food upon which children are fed, although, as it has been already remarked, iodine gave no indication of the presence of starch. The liquid was perfectly neutral. When a portion was boiled, a slight coagulum was formed, which was easily dissolved by concentrated and boiling muriatic acid, giving to it the purple colour which that acid acquires by digestion at a high temperature with most albuminous compounds. Another portion of the coagulum was easily dissolved in boiling caustic potash, but it was re-precipitated white on the addition of muriatic acid. These results shewed that the liquid of the stomach consisted chiefly of a mixture of milk and mucus. In order to determine whether any opium was present, the viscosity of the liquid was destroyed by

distilled water and a saturated solution of neutral sesquichloride of iron added. No change of colour was produced: it was therefore evident that there was no meconic acid, and consequently no opium present. To render this more apparent, two drops of the artificial mixture already referred to were added to the liquid, when the red colour, indicative of the presence of meconic acid, was clearly brought out, although the quantity of opium thus added did not exceed the thirty-third part of a grain. On testing the contents of the stomach for morphia, by strong nitric acid, there was no change of colour indicative of the presence of that alkaloid. This colour was, however, immediately produced when five drops of the mixture, equal to one-fourteenth part of a grain of opium, was added. Similar results were obtained from an analysis of the liquid contained in the intestines. The conclusions drawn from these experiments were, 1. That no opium, in any quantity susceptible of detection by chemical processes, was contained in the liquids of the stomach and intestines; and, 2. That opium was certainly contained in the mixture, in the proportion of rather less than a grain to a drachm.

At the inquest the following points were elicited. The child had been restless on the Saturday night, and the nurses considered it advisable to give it a good dose of a "sleeping-mixture" the following night. A quantity of a brown powder (opium) was put into a bottle, and hot water poured on it from the kettle; it was then well shaken, and a teaspoonful was given to the child at about half-past seven o'clock. In the course of a few minutes the dose was repeated; and it appeared, from the statement of a woman who held the child, that altogether about three and a half teaspoonfuls were given to it. The child speedily became quiet after the last dose, and fell asleep. About six hours afterwards it awoke, and had some milk. Nothing further was observed until about seven o'clock the next morning, when it was found to be breathing very hard. Soon after this, the child was seen by Mr. Duke, and found by him in the condition already described. It did not appear that the child had awakened, or shewn any consciousness after taking the opium, except when milk was given to it; nor could it be

ascertained whether it was then completely roused. The child died at half-past one o'clock the following day, and therefore about *eighteen hours* after the mixture had been given to it.

From this evidence, it was impossible to state, with any precision, what quantity of opium had really been given to the child, because it appeared that the bottle had been shaken by the nurse before pouring out each teaspoonful, and therefore it is probable that some portion of finely powdered opium had been swallowed. One fact, however, was certain, from the examination of the infusion, namely, that the child could not have taken less than three grains of opium, and most probably much more: the wonder is, that, under such a dose, the child survived so many hours. The quantity given was more than sufficient to cause the death of so young a child, as one teaspoonful only would most probably have sufficed to prove fatal. Mr. Duke and myself, therefore, had no hesitation in referring the death of the deceased to an over-dose of opium. Our opinion was based—1. On the nature and quantity of the mixture administered; 2. On the symptoms; 3. On the appearances met with in the brain; and 4. On the strong negative proof, in the absence of all marks of disease, to account for the rapid death of this child from a state of comparative health.

The coroner and jury requested to know how this opinion could be reconciled with the fact, that no opium could be detected in the contents of the stomach. In reply to this question, it was stated that opium was rarely found in the stomach in the cases of young children, owing to the smallness of the fatal dose: that, as this child had lived eighteen hours after taking it, the opium would be partly removed by absorption, and partly digested or acted on by the secretions of the stomach: that owing to these causes, opium is seldom discovered in the stomach even of an adult, when the deceased has survived several hours, although it may have been taken in a considerably larger dose than in this instance. Again, the child had not vomited; and as only one teaspoonful of liquid was found in the stomach, it was clear that the poison must have been removed by absorption and digestion. The verdict returned was, that the child had died from an over-

dose of opium, administered unadvisedly and without any intention of causing death.

This is one of those numerous cases in which death is occasioned by the ignorant employment of a powerful drug. Parliamentary returns shew that the deaths from opium throughout England and Wales are not less than one hundred per annum, and this great mortality from one poison occurs chiefly among infants and young children. Owing to the facility with which opium may be procured, and the improper use made of the drug, cases of poisoning by it constitute about one-third of all those that come before the court of the coroner. This case was, perhaps, attended with less doubt than many which have required investigation. The child's previous health was so good, that it was wholly impossible to ascribe death to disease; and the nature and progress of the symptoms, in the course of which there was no interval of apparent recovery, together with the appearances found in the head, were such as to point at once to opium as the fatal cause. The non-detection of the poison in the body, considering that it was discovered in the mixture proved to have been exhibited, was a point of minor importance, and one which could not affect the medical inference respecting the cause of death. Admitting that the child took five grains of opium in the form of infusion and powder together, this would not be more than equivalent to one quarter of a grain of morphia; and as the child survived eighteen hours, the entire removal of this small quantity of the active principle, by absorption, was an event by no means surprising.

Although the point was not material as a matter of evidence in this case, yet it is obvious that a question may be put to the medical witness respecting the *solubility of opium* in water, or the quantity which may be taken up by hot water infused on the powder or the extract itself. It is somewhat singular that this question has been entirely passed over by toxicological writers; the reason for which is, probably, that the drug is usually administered as a poison in some one of its medicinal forms. The want of any data on this subject led me to perform some experiments on the solubility of opium in water.

Six drachms of boiling water were poured upon fifteen grains of finely-powdered opium, and allowed to remain for twenty hours. A given weight of the clear liquid, filtered off from the dregs, was carefully evaporated in a sand-bath, and it was found that the water had taken up four per cent. of its weight; *i. e.* 100 parts of the infusion left, on evaporation, four grains of residue. 2. A like quantity of water was poured on fifteen grains of the common extract, sliced: the quantity here taken up varied, on several trials, from two to four per cent. The infusion which had caused death in the case just related held dissolved ($0.4 \times 4 =$) 1.6 gr., or less than two per cent.; and yet a subsequent examination of the dregs shewed that the greater part of the poison had been extracted. The difference may perhaps be referred to the fact, that the powder had been probably used before for a similar purpose; as it is quite certain that the small quantity of water which was here employed would not have sufficed to remove so completely the morphia and meconic acid that only faint traces of their presence could be subsequently detected in the dregs. This leads me to observe, that it is impossible, by one simple infusion in water, to extract the whole of the soluble parts of the opium with the meconic acid and morphia. In the two experiments already related, a fresh infusion of the residue was made; and in each case a brown-coloured liquid, not so deep as in the former instance, was procured, in which morphia and meconic acid were still to be detected. Again, on subsequently boiling the residue in water, an additional quantity was dissolved, containing, also, traces of the active principles of opium. Thus, then, although water may, by infusion, dissolve sufficient to cause death in a particular case, it by no means follows that the dregs should have lost their narcotic properties: on the contrary, a poisonous infusion may still be made from them.

ON THE CHEMICAL PROCESSES FOR DETECTING MORPHIA AND MECONIC ACIDS.

Trial-test for Opium.—Opium is generally characterized by its smell when it is dissolved, but the odour may be concealed by the presence of other substances. It would not,

therefore, be advisable to affirm that the drug was absent, when, in examining any infusion, or the contents of a stomach, the well-known odour of opium is not perceptible. It would be proper in such cases, to employ a trial-test which is of extreme delicacy, and the negative effect of which, provided the liquid be sufficiently concentrated, will fairly lead to the inference that no quantity of opium capable of detection by chemical processes is present. The best trial-test for this purpose appears to me to be the solution of sesquichloride of iron, which will detect the meconic acid contained in the 160th part of a grain of opium.* In order to employ it, a portion of the suspected liquid, if viscid, should be slightly diluted with water; if coloured, it should be so diluted that any change of colour, on adding the test, may be at once perceptible. The test should be saturated and neutral, or as nearly so as possible: it should be added guttatim to the suspected liquid, an equal portion of the untested solution being placed by the side of the glass, for the sake of comparing the effects. If opium be present, a dark red colour will be immediately brought out (permeconate of iron); and it will be found that this red colour is not destroyed by the addition of a few drops of a solution of corrosive sublimate. If no change of colour should be produced by the sesquichloride, and the liquid be at the same time in such small quantity as to admit of no further reduction in bulk by concentration, then it will be useless to seek for opium; as the quantity, if any be present, will be too small for any known process of separation.

The iron-test here acts only by indicating the presence of meconic acid; but when we discover this acid in a mixed liquid, we may infer that opium is present, and immediately set about the usual process for the separation of the morphia. Meconic acid has never been found in any substance except opium or opiate extracts.

Morphia.—It might be supposed, that if, on adding strong nitric acid to a portion of the liquid, a bright red colour resulted, this would be a sufficient indication of the presence of morphia, and therefore of opium; but a serious mistake might be committed in such a case, unless the operator had previously employed the iron-test, and determined the

* The potassa-chloride of gold is also a very delicate test for meconic acid.

presence of meconic acid in the liquid. It is worthy of remark, that the nitric-acid test, while it destroys the colour given by the meconate of iron, will bring out, when added in excess to the same portion of liquid, the peculiar bright amber-red tint which it is known to give in a solution of morphia. The tests for meconic acid and morphia may thus be applied to one quantity of liquid.

The objection to nitric acid as a trial-test for morphia in these cases is, that it gives a similar colour with certain vegetable infusions and liquids containing no opium. The aqueous infusion of *nux vomica* is immediately turned of a bright red colour by nitric acid, owing to the presence of *brucia*. It is difficult to distinguish this colour from that produced by morphia: the only differences observed are, 1. that in the case of morphia the colour is more slowly produced; and 2. that in the case of *brucia* the red colour is destroyed by one drop of a solution of chloride of tin, while the colour caused by morphia requires a much larger quantity of that compound for its destruction. These differences are, however, purely relative. Another objection is, that nitric acid will produce a red colour very closely resembling that of morphia when added to an infusion or decoction of common mustard-seed. As in the case of morphia, the red tint becomes lighter by exposure, or by the simple application of heat. This reaction is of the more importance, because this vegetable decoction also strikes a red colour with the sesquichloride of iron, like that produced by meconic acid. This is said to be owing to the presence of sulphosinapic acid: the red colour given by this acid is, however, immediately destroyed by a few drops of solution of bichloride of mercury; while that given by the meconic acid is not thus destroyed. The decoction of mustard-seed, owing to the presence of this acid, likewise deoxidizes iodic acid and sets free iodine, in which respect it also resembles a salt of morphia. It is said that the common radish and turnip-seed, as well as the horse-radish, contain the same acid principle; and they might therefore yield decoctions closely resembling that of opium in the effects of re-agents upon them. With regard to the sulphocyanate of potash, a solution of this salt gives a red colour with the iron-test, which, however, differs from that

produced by meconic acid in the fact that it is immediately destroyed by a few drops of a solution of bichloride of mercury. It is also coloured red by nitric acid; but on boiling the solution, the acid is decomposed, nitrous acid fumes are copiously evolved, and the liquid becomes colourless. It is well known that saliva contains sulphocyanic acid united to potash or soda; and that the sesquichloride of iron gives readily, with that secretion, a dark red colour, owing to the production of sulphocyanate of iron, this colour being discharged by the addition of one or two drops of a solution of bichloride of mercury. Saliva also decomposes iodic acid, and sets iodine free. So far it resembles, in these chemical reactions, a solution of the meconate of morphia; but it is to be observed, that when strong nitric acid is added to this secretion no red colour, like that caused by morphia, is brought out: there is simply a faint coagulum.*

These facts shew that there are many difficulties connected with the determination of the presence of opium (as meconate of morphia) in liquids the exact nature of which is unknown. The sulphosinapic and sulphocyanic acids contained in certain vegetable substances, and at least in one animal secretion, which may be supposed to find its way into the stomach, offer apparently strong objections to the employment of the persalt of iron as a test for meconic acid. The only chemical difference is the effect produced by the bichloride of mercury when added to the red-coloured liquid. The nitric acid, while it is far less sensitive than the sesquichloride of iron, cannot be trusted as a trial-test for opium, unless we obtain a negative result by the use of the latter. It is thus that an infusion of *nux vomica* is readily known from one of opium; for while this gives a deep red colour with the iron-test, the only effect with the former (*nux vomica*) is to produce a dirty greenish-coloured precipitate. With some liquids, as it has been stated, we have effects produced, precisely similar to those caused by meconic acid and morphia; and in addition to this, such liquids have another remarkable property, which is considered as peculiar to morphia, among the alkaloidal poisons, *i.e.*

* Of the reddening effect produced by the iron-test in indigotic acid nothing need be said, as it is an artificial compound.

of deoxidizing iodic acid. Two of the tests for morphia, and the only satisfactory test for meconic acid, are thus rendered liable to fallacy; and a third test for morphia—sesquichloride of iron—is inapplicable, because the presence of meconic acid in the liquid prevents the production of that blue colour which the neutral sesquichloride strikes with every salt of morphia except the meconate. Even were this not the case, the iron-test could not be safely employed as a correcting test, if we had to deal with a liquid containing vegetable matter; for the smallest traces of tannin or gallic acid would cause the solution to assume precisely the same colour as if morphia were present.

It might be supposed that such difficulties as are here described would suffice to justify the abandonment of the tests at present employed for the detection of meconate of morphia in opium; but, in practice, these objections will not be found to have that force which might at first view be ascribed to them. The seeds containing sulphosinapic acid are not used as articles of food: and I believe it is extremely rare to find any traces of sulphocyanic acid in the contents of the stomach, although it exists in a minute proportion in the saliva. Giving to such objections their greatest value, they would of course apply chiefly to those cases where the contents of the stomach are under analysis; the very condition in which opium is so rarely found, as, unless death be very speedy, to render the search for it hopeless. If death occur rapidly, then, unless much vomiting have taken place, the poison would be found most probably, in large quantity, in the stomach, or otherwise in the vomited matters, so as to lead to its certain identification. It would be easily known, both by its chemical and physical characters; or, if doubtful, by the effects which the administration of some of the suspected solids or liquids might produce on animals. In most cases we have a portion of the liquid swallowed by the deceased handed for analysis, as in the instance related in this Paper; and, with this, some account of the symptoms and post-mortem appearances. Speculative objections to the tests employed, on the alleged ground of the presence of sulphocyanic or sulphosinapic acid, would, in a case of this kind, be utterly inadmissible. Similar objections might be urged,

with greater plausibility, to the chemical analysis of most mineral poisons; but we invariably find that such objections are quite inconsistent with the proved facts of the case.

In employing *iodic acid* as a test for morphia, it is, in general, recommended to add the iodic acid to the solution of starch, before adding this mixture to the alkaloid or its salt. This plan may be properly pursued, in order to test the purity of the iodic acid; but so far as the testing for morphia is concerned, it will be found better to add the acid to the alkaloid or its salt, in a white saucer, when the setting free of iodine will be indicated, not merely by the liquid acquiring a brown colour, but by the easily-recognisable odour of iodine. To this a small quantity of starch may be afterwards added, when iodide of farina, either purple or blue in colour according to the quantity of free iodine present, will result. This is preferable to employing a prepared mixture of iodic acid and starch; because, in this case, if the morphia be small in quantity, the blue iodide of farina may be dissolved, and entirely concealed by the surplus quantity of starch present. In pursuing the plan recommended, the quantity of starch can be exactly adapted to the quantity of iodine set free. The iodic test cannot be safely applied to coloured liquids, but only to clear solutions, suspected to contain morphia or one of its salts. There are many chemical objections to its employment, independently of those adverted to in this paper, for which I must refer the reader to the numerous treatises on toxicology.

Delicacy of the Tests for Morphia.—It has often been a matter of inquiry as to what quantity of a salt of morphia can be detected by the tests at present used. This question is of some interest, because it will often serve to shew why our chemical processes fail in detecting the poison, and thus remove a doubt which might exist in the minds of non-professional persons respecting the real cause of death in particular instances. It was the non-detection of morphia and meconic acid in the stomach of the child whose case has been related which led me to institute some experiments on the subject. I do not find that the most approved toxicological writers have examined this question; although the point at which chemical tests cease to act in detecting a

poison, is a question which is often put to medical witnesses on criminal trials. It has been somewhat loosely stated that the iodic-acid test will detect the 1000th part of morphia; but whether this refers to one grain of morphia dissolved in 1000 parts of water, or the 1000th part of a grain dissolved in water, is not explained, although the former is the more probable; and then it will be seen that such an experiment merely refers to the degree of dilution with water in which the test begins to act upon morphia, and not upon the smallness of the quantity of the alkaloid present. Iodic acid will, however, detect a far smaller quantity of morphia than one grain. Bearing in mind, then, the indispensable necessity for determining the effect of the test on the absolute quantity of the poison, as well as the degree of dilution employed, the following experiments were performed. The tests for morphia are, 1. Concentrated nitric acid, here used colourless; 2. Sesquichloride of iron, perfectly saturated and neutral; and, 3. Iodic acid. The salt of morphia selected was that which is now commonly used in medicine—the muriate. Two grains of muriate of morphia were dissolved in 440 gr. (one ounce) of distilled water, and the whole accurately mixed. This formed the standard solution,

1. *Nitric acid*.—A few drops of the acid having been placed in a white saucer, the standard solution was added guttatim. With two drops, = the 110th of a grain, the liquid acquired a light yellow colour: with five drops, = the 44th of a grain, there was an orange-red tint, not perceptible, however, except in contact with a white surface. When fifteen drops of the solution, = about the 15th of a grain, of muriate of morphia were added to five drops of nitric acid in a small glass tube, there was no apparent change for two minutes, when the liquid began to acquire an orange-red tint, which was very decided when the whole was poured out into a white saucer. It speedily passed to a deep amber-red, quite characteristic of morphia. The test may act upon a still smaller quantity; but, from several trials, this appeared to be the point at which its action began to be satisfactory. Below this point, or in a larger quantity of liquid, a doubt might fairly have arisen whether the acid was acting upon a salt of morphia, or not. One circumstance requires notice: it has been elsewhere stated, that

toxicologists distinguish this effect of nitric acid on morphia from that which it has on brucia by the red colour in the latter case being entirely discharged by the addition of a very small quantity of a solution of chloride of tin. This correcting test cannot, however, be employed under these circumstances; for the red colour produced by nitric acid on such minute quantities of morphia is so slight, that it is immediately discharged by the chloride of tin.

2. *Sesquichloride of Iron*.—One drop of the saturated solution of the iron-test was placed in a white saucer: it had a deep yellow colour. Four drops of the standard solution of muriate of morphia, = the 55th of a grain, were then added, and the liquid acquired a green tint by no means characteristic of morphia; this green tint being probably due to the intense yellow colour of the test mixing with the blue produced by the morphia salts. If, however, the iron-test be diluted so as to destroy the yellow colour, the experiment entirely fails, even where the morphia is comparatively in large quantity. With ten drops of the standard solution, = the 22d of a grain, a blue tint began to appear, but by no means decided, the quantity of water in which the salt of morphia was dissolved appearing to reduce the colour. Twenty drops of the standard solution, = the 11th of a grain, gave, in a small tube, the characteristic blue tint indicative of morphia; and it is at this point that the action of the iron-test begins to be satisfactory. When to a like quantity of the standard solution three drops of the iron-test were added, the colour was of a dull green; shewing how important it is to adjust the quantity of a test so highly coloured as this to the quantity of morphia to be detected; and thus accounting for the frequent failures that have occurred in its employment. Further, it was ascertained, that, on adding more water to a similar quantity of the standard solution, the test ceased to act satisfactorily, the blue colour becoming too much diluted.

3. *Iodic Acid*.—Three drops of a saturated solution of iodic acid were placed in a saucer, and one drop of the standard solution, = the 220th gr., of muriate of morphia, was added. There was immediately a perceptible odour of iodine, and the liquid acquired a faint brown tint, which passed to a light lilac colour (rapidly disappearing) on adding a small quantity

of solution of starch. With two drops of the standard solution, = the 110th gr., the effect was more decided, but the colour given, on the addition of starch, was still red : no blue iodide was formed, and it was found that the red colour soon disappeared on the addition of more starch. Thus, then, the extreme limit of the action of this test is the 220th gr. dissolved in the smallest possible quantity of water. The iodine set free by this small quantity of morphia is perhaps better detected by its peculiar odour than by its action on starch, unless the following modification of the test be adopted :— Place one drop of iodic acid on bibulous paper, saturated with a solution of starch and dried : on this, place the liquid containing the fractional quantity of the salt of morphia ; and the change of colour produced by the evolved iodine on the starch, is immediately rendered apparent. Unless the salt of morphia be in large proportion, this test must fail where the liquid is much diluted or much starch is present. This test acts satisfactorily upon about the 100th gr. of a salt of morphia, taking care that there is no unnecessary dilution of the liquid. The results, then, may be estimated as follows :—Taking the first column to represent the absolute quantity of the salt of morphia ; the second, the quantity of opium to which that quantity of muriate of morphia is equivalent, on the assumption that the common specimens of opium yield about five per cent. of morphia ; the third, the weight of water or liquid compared with the absolute weight of the salt of morphia tested ; and the fourth, the actual quantity of water or liquid employed in the experiment :—

	1.	2.	3.	4.
	<i>Mur. Morphia.</i>	<i>Opium.</i>	<i>Dilution.</i>	<i>Water.</i>
Nitric Acid . .	the 15th gr. . .	(= 12 gr.) . . .	300 . . .	20 drops
Sesquichlor. Iron, the	11th gr. . .	(= 1·6 gr.) . . .	231 . . .	21 —
Iodic Acid . .	the 100th gr. . .	(= 0·18 gr.) . . .	1300 . . .	13 —

There is no doubt from these experiments, that iodic acid is the most delicate test for morphia ; but it is at the same time open to the greatest number of objections, all of which must be removed before any inference can be drawn from its employment. The above table will serve to explain why, in the cases of young children, we can so seldom procure any evidence of the presence of opium from an examination of the liquids of the stomach, even where death has taken place

speedily. The quantity which has destroyed life may be actually smaller than the tests at present known will allow us to discover, even if we can succeed in separating the morphia so as to procure it in a form proper for testing. Admitting, as it is there shewn, that the iodic acid will detect the morphia contained in less than the fifth part of a grain of opium, we must remember that this test cannot be safely applied to coloured organic liquids containing small quantities of the drug; and that the delicacy of its reaction rather applies to the salts of morphia in a pure state, than to mixtures containing opium.

Narcotine.—This principle is of no more importance to the medical jurist than codeine, narceine, paramorphine, and some others which have been extracted from opium, because his researches are ended when he has proved the existence of morphia and meconic acid. Nevertheless, it may be proper to make one or two remarks upon certain differences between morphia and narcotine. Narcotine is insoluble in a solution of caustic potash, even on boiling; while morphia is quite soluble in the alkali, and the solution, supersaturated with nitric acid, gives the peculiar amber-red colour already described. Nitric acid poured on narcotine gives to the crystals a bright sulphur-yellow colour; and it is remarkable that the same should happen on the addition of concentrated sulphuric acid. It was discovered by Couerbe, that when to a mixture of sulphuric acid and narcotine a drop of nitric acid was added, the yellow liquid acquired immediately a deep blood-red colour, passing to a dark brown: if the nitric acid be in excess, this effect is not observed. If sulphuric acid be poured on morphia, or any of its salts, they acquire a slight brown tint after a short time, from a partial decomposition: if one drop of nitric acid be then added, a deep red, almost approaching to a black colour is brought out. This test, therefore, affords no satisfactory distinction between morphia and narcotine. Narcotine is easily known from morphia—1. By nitric acid giving to it a yellow colour; 2. By its not being turned blue by sesquichloride of iron; 3. By its not decomposing iodic acid and setting iodine free. Should this last result occur, it will indicate that there is a portion of morphia mixed with the narcotine. The sulphate of narco-

tine has been lately recommended as a test for nitric acid or a nitrate, in consequence of its acquiring a deep blood-red colour when added to either; but this compound is not more delicate, while it is far less accessible as a test for common use, than finely-divided copper.

Meconic Acid.—Some experiments were performed in order to determine the *solubility* of this acid in water. As an average result, twenty-five grains of a cold saturated solution left, on careful evaporation in a sand-bath, 0·2 gr. This is equivalent to 0·8 per cent., or about one part in 125 parts of water. It is much more soluble in boiling water, but is again in great part precipitated on cooling. The cold saturated solution has, notwithstanding its sparing solubility, a strong acid reaction. The solution, when very much diluted, is precipitated of a yellowish-white colour by acetate of lead (meconate of lead;) and in reference to the detection of the acid in medico-legal analysis, it is proper to observe, that the meconate of lead is quite insoluble in acetic acid—a property which allows it to be thus easily separated from some of the organic compounds of the oxide of lead. Like all the vegetable salts of lead insoluble in water, the meconate is very easily dissolved by nitric acid. Meconic acid is precipitated white on the addition of lime-water (meconate of lime); but this precipitate is easily dissolved by acids, even those of the vegetable kingdom. A mineral salt of lime (chloride of calcium) gave no precipitate in a cold saturated solution of meconic acid. These results appear to me to shew that a salt of lead is preferable to a salt of lime as a precipitant of meconic acid. The acetate of lead is commonly used for this purpose in organic mixtures suspected to contain meconate of morphia. For reasons above given, the liquid should be slightly acidulated with acetic acid before adding the salt of lead.

Separation and Detection of Meconic Acid in Opiate Mixtures.—It has often been a question respecting the smallest quantity of meconic acid which should be present in a liquid, in order to admit of its separation by acetate of lead, and subsequent identification by its appropriate test—the sesquichloride of iron. This is an important point, because it substantially involves the question of the quantity of opium which should

be present, in order to admit of our obtaining, in a separate state, morphia and meconic acid. Not finding in any work on toxicology any experiments on the subject, it was thought advisable to institute a few. A standard solution of meconic acid having been made, it was found, that when one drop (= the 220th gr. of meconic acid) was added to ten drops of a saturated solution of acetate of lead, diffused in one fluid ounce of water, there was a visible opacity; but no perceptible quantity of meconate of lead was precipitated when the proportion of meconic acid was less than the forty-eighth part of a grain. Admitting that opium on an average contains six per cent. of meconic acid, according to the late analysis of Smyrna opium by Mulder, this is equivalent to one grain of the acid in 16·6 gr. of opium; and the forty-eighth part of a grain of meconic acid (= ·0208 gr.) would be therefore represented by 0·34 gr. of common opium. Hence less than that quantity of opium, diffused in a fluid ounce of water, would not yield, with acetate of lead, a sensible quantity of meconate; and therefore the attempt to separate morphia and meconic acid by this process would be fruitless; for this cannot be done with so small a quantity, even where the pure acid is dissolved in distilled water, and is in the most favourable condition for separation. Allowing that the quantity of meconic acid contained in some kinds of opium is greater than is here assumed—and it is said to vary from about four to nearly eight per cent.—still it is obvious, from these results, that, unless the soluble matter of several grains of opium exists in the liquid for analysis, it will be difficult to obtain meconic acid and morphia separately. This fact sufficiently explains why opium is rarely found in the stomachs of young children who have been speedily killed by small doses, and therefore under circumstances the most favourable for the detection of its constituents. The precipitate formed in an opiate infusion by acetate of lead is a mixture of meconate of lead with organic compounds of oxide of lead. The precipitate may appear to be copious, when the proportion of meconate is really small. Dr. Ure obtained, in one experiment, twenty-seven grains of impure meconate of lead from 100 grains of opium; but the precipitate must have contained much impurity, probably one-half of its

weight. Not more than eight per cent. of meconic acid were found by Mulder in examining five specimens of Smyrna opium.

It may be readily supposed that dilution has some influence on the precipitation of meconic acid by the acetate of lead. When the solution of acetate of lead was mixed with the forty-eighth of a grain of meconic acid, dissolved in a few drops of water contained in a small tube, there was a speedy subsidence of the precipitated meconate of lead, and it was collected within a small compass. When, however, the precipitation took place in the midst of a fluid-ounce of water, the precipitate was spread in a finely pulverulent state over a large surface of glass, whence it was difficult to detach it for subsequent analysis. This shews that it is advisable, when operating on small quantities, to have the liquids in as concentrated a state as possible.

Another question is, What quantity of meconate of lead is required in order to yield sufficient meconic acid for the determination of its presence by the iron-test? There are various ways in which meconic acid may be separated from the meconate of lead for this purpose. Dr. Hare originally proposed the digestion of the precipitate with sulphuric acid; and this, while it is the more speedy way of demonstrating the presence of the acid, is the only plan applicable to its detection when the quantity of meconate on which we have to operate is very minute. One half grain of meconate of lead, equivalent to about one-fourth of a grain of meconic acid, was digested in a watch glass with a few drops of diluted sulphuric acid; and the sulphate of lead being allowed to subside, one or two drops of the sesquichloride of iron were added to the supernatant liquid, when the red colour, indicative of meconate of iron, was immediately produced. From the intensity of colour acquired by the solution, there was no doubt that even so small a quantity as one-eighth of a grain of meconate of lead, equivalent to about one-sixteenth of a grain of meconic acid, would, when properly treated, allow of the separation and detection of that body. But the meconic acid may be detected in a quantity of meconate of lead which it would be very difficult to collect in a solid form; as, for example, the sixteenth

of a grain. Thus, one forty-eighth part of a grain, dissolved in a small quantity of water, was precipitated by a few drops of a saturated solution of acetate of lead in a narrow tube. When the precipitate had subsided, the clear supernatant liquid was poured off, and two or three drops of concentrated sulphuric acid were added to the moist meconate of lead still contained within the tube. A small quantity of water was added, and the heat of combination sufficed, without boiling, to decompose the meconate; the meconic acid rising into and becoming dissolved by the clear supernatant liquid. The iron-test added to this gave the strongest indications of meconic acid. When this experiment was performed with a large quantity of water the effect was rendered obscure by dilution.

It sometimes happens, in decomposing impure meconate of lead by boiling it with diluted sulphuric acid, that the liquid acquires a deep-red tint, which might interfere with the action of the iron-test. I found, on evaporating this liquid, which is a mixture of sulphuric acid, meconic acid, and colouring matter, that the latter becomes carbonized; and that from the evaporated residue a clear aqueous solution was obtained, which readily admitted of the use of the iron-test without any risk of fallacy. This experiment shews that diluted sulphuric acid does not readily transform meconic to komeconic acid, as it is alleged in some chemical works.

There is no doubt that Dr. Hare's plan of decomposing the meconate of lead by sulphuric acid is the best, provided we take care to avoid the use of too much acid. It has been recommended to employ a current of sulphuretted hydrogen gas for the same purpose, the precipitate being diffused through a quantity of distilled water. This answers very well when the quantity of meconate is large; otherwise it is inapplicable: and as it requires a much longer time for the completion of the experiment than when sulphuric acid is used, there does not seem to be any good reason for abandoning the use of the acid for that of the gas. Another plan suggested itself to me lately, which appears to be in some respects an improvement on the use of sulphuretted hydrogen, as it is much more expeditious, and equally satisfactory

in its results. A few grains of impure meconate of lead, obtained by the precipitation of an opiate infusion, was rubbed up with hydrosulphuret of ammonia diluted with water, and filtered. The liquid was then boiled until acetate of lead gave no brown precipitate with it; and then meconic acid was easily detected in it by the iron-test, under the form of meconate of ammonia. If too much hydrosulphuret be used, the liquid retains a yellow colour, which it only loses after long boiling, the sulphur then becoming precipitated as a pale yellow sediment. This process requires much more meconate of lead for its successful employment than that by sulphuric acid.

Delicacy of the Test for Meconic Acid.—A standard solution was made of two grains of the crystalline acid in 440 grains of water, and allowed to become equally diffused. A drop of sesquichloride of iron, diluted with two drops of distilled water to remove the yellow colour, was placed in a white saucer, and one drop of the standard solution (=the 220th grain of meconic acid) was added, gave instantly an intensely red colour, which was not discharged by adding to it an equal bulk of a saturated solution of bichloride of mercury. The colour was as intense as that produced by the addition of the iron-salt to a few drops of a strong solution of sulphocyanate of potash; and the difference between the red meconate and red sulphocyanate of iron was immediately apparent on adding a like quantity of bichloride of mercury to the latter, when the colour was instantly destroyed. The standard solution was now so diluted that each drop contained less than the 13000th of a grain of meconic acid. The iron-test began to act with five drops of this liquid (= the 2640th of a grain). With fifteen drops (= the 880th grain) a clear red was brought out, best seen in a tube on the iron-test first reaching the upper stratum of the acid liquid, but becoming somewhat faint by agitation. With twenty-five drops (= the 570th grain) there was a decided red colour, characteristic of the meconate of iron, which was further confirmed by the colour not being discharged on adding five drops of a saturated solution of bichloride of mercury. This is the point at which the test begins to act for medico-legal purposes, always taking care

that we operate with a minimum of water, as dilution renders the result obscure. With thirty-five drops (= the 377th grain) the action of the test was of course much more strongly marked.

It will be seen from these results that the test for meconic acid is far more sensitive than any of the tests for morphia; 2. That its action is subject to less interference from the presence of organic and other matters; and 3. That these properties render it well adapted as a trial-test for opium, in all mixtures the nature of which is unknown. The 50th of a grain, or the smallest visible quantity of solid meconic acid, is easily detected by the iron-test when free: but here we see that, in solution, provided the quantity of liquid be small, less than the 500th part of a grain may be readily discovered. Thus we may obtain the evidence of the presence of meconic acid in a liquid from a quantity far smaller than would be sufficient to furnish a separable precipitate of meconate of lead by the addition of the solution of acetate. The preceding experiments shew that while it requires at least one-third of a grain of opium to give a precipitate of meconate of lead in a minimum of water, the meconic acid of less than the 100th of a grain of opium may be detected by the direct application of the iron-test. It is by no means necessary that we should, in all cases, procure a precipitate of meconate of lead, and decompose this by sulphuric acid, before we pronounce on the presence of meconic acid; because we do not thereby increase the certainty of the operation of the iron-test. There is no greater risk of fallacy in applying this test to the original liquid, than in applying it to the liquid derived from the decomposition, by sulphuric acid, of a minute quantity of meconate of lead. The use of the acetate of lead merely enables us to concentrate the meconic acid, to collect it in a solid form, and in a small bulk. The following table of results is intended to shew, in the first column how small a fractional quantity of meconic acid may be detected; in the second, the quantity of opium, in decimals, to which it corresponds; in the third, the proportion of liquid, by weight, in which the meconic acid was dissolved; and in the fourth, the actual quantity of liquid present.

1.	2.	3.	4.
<i>Meconic Acid.</i>	<i>Opium.</i>	<i>Dilution.</i>	<i>Water.</i>
the 220th gr.	(= '075 gr.)	880	4 drops
the 377th gr.	(= '043 gr.)	13572	35 —
the 570th gr.	(= '028 gr.)	14820	25 —
the 880th gr.	(= '018 gr.)	14080	16 —
the 2640th gr.	(= '006 gr.)	15840	6 —

It is apparent from this table that the meconic acid contained in about the one hundred and sixtieth part of a grain of opium, may, under favourable circumstances, be made visible by the application of the iron-test. This explains why meconic acid may be often detected in an analysis, when morphia cannot;—a fact which has been repeatedly noticed by medical jurists. It also shews, that, when the iron-test, *cateris paribus*, gives no red colour in an unknown liquid, we may safely say that the quantity of opium, if any be present, is too small to admit of detection.

It will be understood, that in these experiments on the smallest quantity of *opium* susceptible of detection by tests, the inferences are derived from the use of *pure* meconic acid and a *pure* salt of morphia in very small quantities of water. The experimentalist must make due allowance for the meconate of morphia being mixed up with other principles in opium, as well as for the concealment or modification of the colours produced by the tests when the opium is diffused in a large quantity of water or in viscid alimentary matter. In such cases, before the tests are employed, the liquid should be evaporated to an extract, and a fresh infusion or decoction made from the residue, by means of water mixed with a small quantity of alcohol. On the whole, it is obvious that the tests for opium are far inferior in delicacy and certainty to those employed for arsenic and other mineral poisons.

The object of the latter part of this Paper has been to shew, 1st. the degree of solubility of opium in water; 2dly, the difficulties connected with the analysis of morphia and meconic acid, and the most striking chemical properties of those two bodies; 3dly, the relative power or delicacy of the tests for morphia, with the smallest quantity of that alkaloid susceptible of detection; 4thly, the degree of solubility of meconic acid in water; 5thly, the limit of the power of a salt of lead to

precipitate and separate meconic acid in opiate mixtures; and 6thly, the smallest quantity of meconic acid susceptible of detection, either free or combined with the oxide of lead; and, by inference, the smallest quantity of opium. Some of these points do not appear to have been hitherto examined by toxicologists; and it is my wish, therefore, by these remarks, to direct the attention of practitioners to them: for there are few cases of criminal poisoning by opium in which questions relative to them do not arise.

ON THE ACTION
OF
DIGITALIS,
AND ITS USES IN DISEASES OF THE HEART.

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IN the communication which I have this evening to bring before the Physical Society, I purpose submitting to the consideration of its members certain conclusions as to the action of digitalis, and its uses in diseases of the heart, to which, after an extended series of clinical experiments, I believe I am warranted in arriving.

I should wish to state, *in limine*, that these experiments, which were commenced at the suggestion of the late Dr. Bree, have been upwards of 400 in number; and that my inquiries have now extended over a period of more than five years. The observations were made, for the most part, in dispensary practice, during the course of an official connection with St. John's Hospital, the Farringdon, and the Tower-Hamlets Dispensaries. Of all the cases I have preserved more or less copious notes, not a few of which have gone a good deal into detail; and it is from the careful examination and study of these that I have deduced those general rules, which now guide me in the employment of this potent medicine, and the exposition of which is the object I have in view in the present Paper.

In 184 cases the drug was administered alone, strictly *per se*, or in such vehicles as could not interfere with, or in any way modify, its action. The powder of digitalis, for example, in sugar, tragacanth powder, or made up into pills with crumb of bread; the tincture and the infusion in common water; although, in a very few instances, cinnamon or pep-

permint-water have been employed. I particularly mention these circumstances, which to some may perhaps appear trifling, because I know of no medicine whose effects are more modified by prescriptive combination than digitalis; and because I believe that many of the discordant statements to be found in the works of some of our most practical writers, as to the effects of this drug, have chiefly originated in a disregard of this and some other modifying circumstances, which I shall have more particularly to specify in the course of the present Paper.

Without occupying the attention of the Society with any observations on the rarer and more doubtful effects attributed, by some writers, to digitalis, I shall proceed at once to the consideration of its sedative and diuretic properties. These, which evidence the influence of the drug, in the one case upon the heart, and in the other upon the kidneys, constitute assuredly its best-marked, if they be not, as I indeed believe, its only properties. The profession, as a body, seem pretty generally to recognise this twofold action of digitalis; although much difference of opinion exists as to the relative frequency and facility with which such effects may be produced. The question is one of importance, and will receive some illustration in the course of the following remarks.

In our attempts to appreciate accurately the immediate or physiological effects of digitalis, and yet more in order to insure the one or other of its modes of action, it is necessary to have regard to the form in which the medicine is administered. I have expressed a belief that there are few if any substances, in the entire range of the vegetable materia medica, whose effects upon the system are more strikingly modified by prescriptive combination than digitalis. A like remark may be made in reference to the pharmacological treatment which the drug undergoes; and it hence becomes necessary to point out, as accurately as may be, any peculiarities which pertain to its various officinal forms. Those commonly employed are the powder, the infusion, and the tincture; and it is with these only that my trials have been made. The extract recently introduced into the London Pharmacopœia I have never prescribed. Of its peculiarities (if indeed it possess any, save that of uncertainty) I

have no personal knowledge; but if I may judge from the statements of some friends who have employed it, it would seem to be a preparation of little or no value, and by no means likely to come into extensive use.

The tincture has uniformly appeared to me to be the form in which digitalis acts with the greatest certainty and effect upon the heart; while, as regards the diuretic influence of the drug, I have derived incomparably the most advantage and satisfaction from the infusion. This, I believe, will be found accordant with the experience of most physicians; and, if borne in mind, will, to a certain extent, assist in reconciling some of the contradictory views entertained by different practitioners, as to the proper and usual action of the drug.

In a letter which I received in the course of last summer from an experienced provincial physician, who, in the course of a forty years' extensive consultation practice, had given digitalis very largely, I find the following remarks:—"There are few remedies which I have employed more frequently or extensively than the purple foxglove. I consider it the most certain and powerful diuretic at our command. It has a wide sphere of utility; for, by combination, it may be made applicable to many states or conditions of the system. Of its reputed effect upon the heart I know nothing: I have but rarely seen such an effect produced, and believe it only occurs when the kidneys refuse to act, and the poisonous influence is about to develop itself; of which poisonous influence I consider such symptoms to be, in all cases, the prelude. If," continues my venerable friend, "you believe in the so-called sedative influence of digitalis, as a thing to be frequently witnessed, and, moreover, administer it with that intention, I can only say, on the one hand, I doubt the accuracy of your observation; and, on the other, you are an unsafe practitioner, and do your utmost to murder your patients." Now in contrast with this very decisively-expressed, and, as it seems to me, most exclusive view, it may be well to quote here the opinion entertained by a very competent authority on diseases of the heart—the late Dr. Thomas Davies:—"No means" says he, "excepting the abstraction of blood, diminishes the impulsion of the heart so completely and so certainly as digitalis. I have been in the habit of using it for several

years for these affections, and have rarely seen it fail in producing at least temporary relief."

Two more discordant statements than these could scarcely be placed in apposition, yet both have been the result of extensive practical experience, and however contradictory they may appear, must therefore necessarily have some foundation in truth. Their explanation is to be found in the different forms, in which the medicine was prescribed. My correspondent invariably employed the infusion, the only form in which he had any confidence; whilst Dr. Thomas Davies, I am informed, deduced his opinion from an extensive employment of the tincture. I am inclined to believe, from the remarks of one or two professional friends, who entertain what I consider one-sided views in regard to digitalis, that much of the discrepancy of opinion existing upon this point will, if more minutely investigated, resolve itself into this—that a conclusion has been deduced from the exclusive employment of one only of the officinal preparations of the drug.

The powder appears to me the least certain and the most unmanageable of the preparations of digitalis. I have carefully watched its administration in nearly forty cases; and, in the majority of instances, it has neither influenced the heart nor increased the flow of urine. When prescribed alone it has seemed to me next to useless, and in no degree comparable with either the tincture or infusion. In combination, however, the case is somewhat altered; for, given in the well-known pill, with mercury and squills, it constitutes an admirable and efficient diuretic. I have not succeeded, however, by any combination, in concentrating its action in a kindly manner upon the heart. In some instances it has seemed for a time altogether inert; when subsequently its effects have suddenly appeared, the heart's action has become intermittent, nausea, and a tendency to syncope, have been manifested; and the general condition of the patient became such as to render the discontinuance of the medicine necessary. As an efficient and manageable sedative I consider the powder of digitalis, therefore, to be comparatively valueless.

By the term 'sedative action of digitalis' I mean to imply

the direct influence exerted by the drug upon the central organ of the circulation. This is of so marked and peculiar a character as to have induced a recent writer to designate digitalis as the opiate of the heart. "It is," says Bouillaud, "incontestibly the most efficacious and direct of all sedatives—the true opium of the heart."

In practice, I have found it necessary to mark distinctly two modes in which the heart is affected by digitalis. The one of these I would, for the sake of distinction, denominate the depressing, the other, the antispasmodic action of the drug. Both of these are equally well marked; but, to attain them, very different modes of management become necessary.

The depressing influence, is that referred to in the extract I have made from the published lectures of Dr. Davies, wherein is broadly stated the powers possessed by the drug of diminishing the force of the heart's contraction. It is to this, also, that Bouillaud alludes, when, speaking of the employment of digitalis, he says, "We thus diminish the number and *force* of the heart's beats, as if by enchantment." It is this property of digitalis which renders it so useful a remedy in simple and concentric hypertrophy, and gives it, also, a certain amount of value in all instances of complicated organic disease of the heart into which hypertrophy enters as an element. Here an increased impulse is *the* prominent symptom from which, either directly or indirectly, much of the patient's sufferings, and in the early stage of the disease, all the danger, evidently arise. The diminution of such augmented impulse forms a prominent indication; and digitalis comes in with admirable effect as an auxiliary to, or substitute for, bleeding. Digitalis is, however, I believe, less frequently required, and less frequently exhibited as a depressing agent, than as an antispasmodic or diuretic. As a depressant, it is called for only where an increase of impulse is a well-marked and abiding symptom: and as this—pericarditis and endocarditis being excepted—occurs only in hypertrophy, either simple or combined with other organic lesions, it is in these only that the drug, as a depressor of action, is admissible. Augmented impulse, then, is the symptom, and hypertrophy, as its cause, the pathological condition

which should direct our attention to digitalis, and induce us so to administer it as to obtain its depressing influence.

For this purpose, it will be best to administer the tincture in tolerably full doses, at intervals of eight, ten, or twelve hours. I have not found that the efficiency of digitalis in this direction can, as a general rule, be augmented by combination. It has been tried with hydrocyanic acid, the mineral acids, colchicum, nitrate of potash, conium, and hyoscyamus; but I have found, in such admixtures, so little satisfaction, that when I desire to reduce the action of a heart overgrown in its muscular structure, and attempt such an object by digitalis, I now invariably prescribe it *per se*.

The antispasmodic property of digitalis is that which renders it so peculiarly useful and extensively applicable a remedy in cardiac disease. To the term antispasmodic, as applied to digitalis, some objections might perhaps be adduced. In order to avoid circumlocution, some general expression is, however, necessary; and in the absence of a less objectionable phraseology, I must beg permission to employ it.

Cullen, in his Text-book on Physiology, speaks of mobility, or a greater readiness to move than power to complete the motions; a condition which is more commonly designated, in the present day, excitability, or irritability. Such a state is often manifested by the heart; and it is one upon which digitalis, with proper management, exerts very considerable controul. The majority of cardiac diseases present it, in a greater or less degree, at one or other period of their course; and in these, digitalis, as an antispasmodic, has a most extensive sphere of utility. I know, indeed, of no one disease of the heart—not even excepting hypertrophy—in which irritability, as manifested by temporary attacks of tumultuous action, palpitation, inequality, irregularity, or intermittence of beat, may not occur. Such symptoms, although coincident, have no essential connection with structural change. They depend on a peculiar modification of the *vis insita* of Haller; are analogous to certain affections of the voluntary muscles usually classed under the somewhat vague term 'nervous;' and, like these, receive the most prompt relief from the class of remedial agents known as antispasmodics.

The effects of digitalis as a depressing agent are most, satisfactorily and certainly produced when the tincture is administered alone; but it is in combination only that its antispasmodic properties can, as a general rule, be obtained. Given in combination with camphor, assafoetida or galbanum, ammonia, Hoffman's anodyne, or the other drugs classed under the general name of antispasmodics, it seldom fails to quiet, more or less, the tumultuous beatings of an irritable or mobile heart, provided the impulse be not at all, or not materially, augmented. Thus employed, it will exert the most beneficial influence on palpitation, oppression, and distress in the præcordia, will relieve the hurry of breathing, and calm that irritability of body and of mind so generally witnessed under such circumstances.

That this effect is owing to the digitalis, rather than to the medicines with which it is associated, I have repeatedly assured myself, by withdrawing the former and continuing the latter: a loss in the amount of controul over the heart has been the general result. The converse of this has been also tried: the camphor, ether, or ammonia have been withdrawn, and digitalis alone continued. Under such circumstances, the depressing, and not the antispasmodic effects have been observed. I shall content myself with the bare expression of this fact, without attempting to theorise upon it. It would, however, be an interesting question to decide, whether digitalis directs, as it were, the action of the combined medicines upon the heart; or, on the other hand, whether the combined substances merely oppose and neutralize its depressing influence. That some of the drugs which I have combined with digitalis exert an influence on the heart of a quieting character I feel perfectly sure. Camphor and assafoetida are perhaps the best marked in this respect, particularly the former. The influence of camphor upon the heart, and its applications to particular morbid states of that organ, is, I am convinced, an inquiry full of interest: it is one upon which little or nothing has yet been done, though I am convinced it would afford important practical results to any one, who, having time and opportunities, would enter upon its investigation.

The action of digitalis on the heart has been represented

by many writers as uncertain, and rarely to be depended on. My own experience leads to a very different conclusion. There can, it is true, be no doubt, that, in any given case, numerous circumstances may exist which have the effect of materially modifying, or altogether obviating, such a result; but the same may be said, with equal truth, of numerous other remedies. It applies to opium, mercury, antimony, &c.; and, far from being any bar to their extensive employment, demands only that appropriate cases should be selected, and certain modifying influences duly understood and appreciated. Now as regards digitalis, I am fully convinced, that, when administered with proper precautions, and in appropriate cases, its action on the heart may be certainly obtained; and, what is of equal if not greater importance, maintained with perfect safety.

The circumstances which have appeared to me to present an obstacle to the action of digitalis on the heart, or, on the other hand, to render its administration hazardous, are plethora, gastric irritation or inflammation, and certain conditions in the habits of the patient having reference to posture and to mental or corporeal activity.

Digitalis has generally—I think I might say invariably—proved inoperative in my hands when administered in a plethoric state of the system. Blood-letting, cautiously employed, with other evacuant measures and low diet, constitute, in more urgent cases, the appropriate means of relief: and although digitalis may become an excellent auxiliary at a later period, when the tension of the vessels has been reduced, it can in no instance be employed with safety or effect, as their substitute.

Certain states of the gastric and intestinal mucous membrane, especially the former, exert a singular modifying influence on the action of digitalis. To this very important point attention was first directed by Broussais; and the majority of his statements I am able most fully to confirm. In all cases, where any thing at all approaching to gastric inflammation has existed, in slight inflammatory dyspepsia, and even in the irritable species of the same disease (both of which frequently co-exist with lesions of the heart), I have found it utterly impossible to obtain either the depressing

or antispasmodic effects of digitalis: on the contrary, the stomach has been irritated by its use, all the gastric symptoms have been more or less aggravated, and the heart sympathizing, its action has been excited. I think it not improbable that it was owing to a non-recognition of this fact, that some writers—as Dr. Sanders in this country, Vol-lelen and Ypey on the Continent—have been led to regard digitalis as a stimulant or narcotic, and to affirm that its primary effect is to excite the heart's contractions, as well in frequency as in force. In most of the cases of cardiac disease accompanied with gastric derangement, yet requiring a depressant or antispasmodic, hydrocyanic acid will be found an admirable and efficient substitute for digitalis. It not only influences the heart in the required mode, but tends directly to alleviate that condition of the digestive organs, which itself aggravates the cardiac symptoms, and proves a barrier to the administration of digitalis. In a few cases digitalis may be advantageously resorted to when the derangement of the stomach has been removed; but more frequently it will be found, I believe, on trial, altogether inadmissible. A peculiar susceptibility to digitalis remains long after every other gastric symptom has disappeared; and a few doses only of the medicine will, under such circumstances, be borne. In a few days the disorder of the stomach returns, having been induced, apparently, by the digitalis; and its removal can only be effected on the suspension of that drug.

Posture and quietude, mental as well as corporeal, are circumstances which materially affect the operation of digitalis. When given with the view of reducing the force and frequency of the heart's contraction the patient should, if possible, maintain the recumbent posture, and avoid all sources of mental excitement. This is more particularly requisite when the full depressing influence of the drug is required, but is of much less importance when given as an anti-spasmodic. The influence of posture has been well illustrated by Dr. Baildon. His own pulse, which had been reduced from 110 to 40 beats in a minute, while in the recumbent posture, rose to 70 when he sat up, and to 100 when he stood. I have had frequent opportunities of observing the same fact, though

certainly never to the same extent. To reduce the pulse, by digitalis, to 40 beats in a minute, is what I should always scrupulously avoid. The patient, under such circumstances, would be in a most precarious condition, and his life every moment in peril. If digitalis is to be employed with safety, the pulse must be carefully watched. Its number may be brought down to the average healthy amount, or perhaps a little less. Of late years I have been cautious not to reduce its frequency below 60 in the adult; and, thus employed, we obtain all the benefit of digitalis, without, as far as I have seen, any of its injurious or dangerous effects.

The influence of digitalis upon the heart is, according to Dr. Lombard of Geneva, but rarely witnessed in a marked degree in those who take much exercise, or whose attention is much occupied during its use. Of the correctness of the former part of this statement there can, I apprehend, be little doubt; and I have witnessed some few facts which induce me to believe that the latter is also true.

The individuals, however, who seek relief from dispensaries—a class, from the observation of whom my conclusions have been chiefly drawn—are not precisely those who shew any large amount of mental activity: my opportunities of observation on this point must therefore be considered as defective.

When the various circumstances which I have now enumerated receive a proper share of attention, and the tincture of digitalis is administered (either alone or in combination, according as we desire its depressing or antispasmodic effects), in doses of from 10 to 30 minims every eight, ten, or twelve hours, we shall rarely, I believe, be disappointed in obtaining its full action on the heart.

The diuretic action of digitalis renders it a peculiarly valuable remedy in many kinds and stages of cardiac disease. It might, perhaps, be anticipated that this was in a great measure attributable to its acting at the same time in a direct degree upon the heart; but such I conceive to be very rarely the case. All the benefit which results from digitalis when it operates upon the kidney is attributable to its mere diuretic action. Any effect upon the heart itself is indirect, and owing to the diminution in the mass of the circulating

fluid by the draining away of its more watery constituents. Digitalis, indeed, but seldom operates as a diuretic when its action on the heart is prominently marked: and, conversely, it but seldom manifests its action on the heart when free diuresis results from its employment. To this conclusion I was led at an early stage of my experiments; and I feel much satisfaction in finding, from the "Dispensatory" of Dr. Christison, that this accomplished physician entertains the same view. "According to my experience," says he, "the sedative and diuretic actions do not concur. I even suspect that they are mutually incompatible."

Dr. Withering, to whom the profession are indebted for the first, and by far the best work which has yet appeared on this drug, affirms that it more frequently and certainly succeeds as a diuretic than any other medicine; and that if it fail there is but little chance of any other remedy succeeding. In this statement I fully concur, provided the conditions so explicitly laid down by that physician as indicative of its applicability be regarded. These, it is well known, consist of phenomena which point to an enfeebled and broken condition of the system. It seldom succeeds in men of great natural strength, of tense fibre, of warm skin, of florid complexion, or in those with a tight and cordy pulse. On the contrary, if the pulse be feeble or intermitting, the countenance pale, the lips livid, the skin cold, the swollen belly soft and fluctuating, or the anasarcaous limbs readily pitting under the pressure of the finger, we may expect the diuretic effects to follow in a kindly manner. These remarks were penned, it is true, in reference to dropsy, from whatever cause arising; but, *mutatis mutandis*, they are equally applicable to all cases in which the diuretic operation of foxglove is required. And in the few remarks I am about to make on the use of digitalis as a diuretic in diseases of the heart, I have little more to do than make a special application of them to the individual lesions of the organ.

Diuretics become useful in diseases of the heart by drawing off the aqueous portion of the blood, and thus diminishing the quantity without materially deteriorating the quality of that fluid. In this manner, by lessening the heart's duty, and unloading the morbid tension of the vessels, they relieve palpi-

tation and dyspnœa, and *obviate* infiltration without materially reducing the strength; while in cases which have proceeded to a greater extent, and are already accompanied with dropsical effusions, they act most beneficially, by bringing about their absorption and ultimate elimination through the kidneys. The two conditions of system particularized by Dr. Withering are daily witnessed in connection with diseases of the heart; and whether a diuretic action be required to relieve oppression and diminish congestion before dropsical effusions have taken place, or, where these already exist, to remove them, digitalis will prove a proper and efficient, or an improper and inefficient means, according as an asthenic or sthenic condition of system shall prevail.

In hypertrophy the symptoms may be, and indeed are, frequently susceptible of material alleviation by a free diuretic action. It is seldom, however, that digitalis is an appropriate remedy; for the conditions of tone which contraindicate its employment, and prove an obstacle to its efficient action on the kidney, may, as a general rule, be said to exist here in all their intensity. In simple and concentric hypertrophy it is only where the powers of the system are giving way, and the fatal event is close at hand, that digitalis, as a diuretic, might, from the general symptoms, be supposed an appropriate remedy. But here time enough does not remain to us to relieve the sufferer by the comparatively slow process of diuresis, even were that action, if produced, competent to bring about such a result. The sinking which characterizes the latter periods of such cases is only to be alleviated, if alleviable, by stimulants, and these often of the most energetic kind, and administered with a liberal hand.

In dilatation, digitalis will often be found a very appropriate remedy, and will generally operate with more certainty and efficiency than any other diuretic. Here we usually find a weak, unsteady, or intermittent pulse; pallor or lividity of countenance; cold extremities; and, when dropsical effusions have supervened, a flabbiness of the œdematous parts. These are precisely the conditions to direct attention to digitalis. Here it will operate with much certainty upon the kidneys; and should the case be one to be benefitted by diuretics, in foxglove we find that which is most appropriate.

It is in valvular disease, however, that diuretics in general, and digitalis in particular, prove of the greatest utility. Under a free discharge of urine, the cough, dyspnœa, and the præcordial load and anxiety subside, and the serous effusions diminish, or altogether vanish. The applicability of digitalis as a diuretic, in valvular disease complicated with other organic lesions of the heart, will be best determined by the greater or less approximation of such superadded condition either to dilatation or hypertrophy. As the one or other of these exist, so, as a general rule, will digitalis be found either an appropriate or an inappropriate medicine.

Time will not allow of my making particular mention of each of the diseases of the heart, in which, as a diuretic, digitalis is admissible. This is also unnecessary; for a key to a solution of the question is, according to my belief, to be found in the presence of dilatation, and of that condition of the general system which commonly accompanies, and with tolerable precision indicates, its existence.

There is, however, one state of the heart, attended by general symptoms near akin to those accompanying dilatation, where digitalis, if I may trust my limited experience, is rarely an efficient or bearable diuretic;—I allude to softening of the heart. In two well-marked instances of this disease I have found a combination of tincture of cantharides, spirits of juniper, and decoction of winter green, by far the most kindly and efficient diuretic; and by means of this draught, three times a day, omitting it for a week at intervals, with a pill of camphor, sulphate of iron, and assafoetida, have been able to keep the patient in a very comfortable state, and apparently ward off the fatal event for a very considerable period. In both these cases the existence of well-marked softening was proved by inspection after death.

The diuretic action of digitalis may be materially assisted by attention to certain circumstances, which I shall now briefly enumerate. The preparation employed is a point of considerable importance; and in my hands none have acted with so much certainty and activity, whether administered alone or in combination, as the infusion. This may certainly be considered *the* diuretic form of the drug; and from its administration, in doses of from half an ounce to an ounce every six

or eight hours, I have generally derived all the good that can legitimately be expected from diuretics. Although the infusion rarely displays any very decided action on the heart, but seems, in general, to concentrate all its energy upon the kidneys, I have nevertheless been induced, by the suggestions of Dr. Bree, to use every means to prevent the sedative operation of the drug. When administered as a diuretic, I request the patient to take, if possible, moderate exercise; just so much as the cardiac symptoms and general bodily condition will admit of without distress, but, in all cases, short of producing diaphoresis. A moderate quantity of drink is often advantageous; and keeping the loins warm, as by covering them with a double or triple layer of flannel, or applying a warm and stimulating plaster, as recommended by Dr. Lombard, will be found, in many cases, an important adjuvant.

To the administration of digitalis, for a protracted period, or to the amount which, in some instances, is absolutely necessary for the production of its full medicinal action, many practitioners entertain a deeply rooted objection, on account of the untoward and even fatal results which are said to follow its exhibition. My own observation leads me to believe that occurrences of this kind are *exceedingly rare*, and that the apprehensions which exist as to the use of this medicine are not warranted by what we learn from exact observation.

In the whole course of my experiments there has not been a single instance in which such symptoms have arisen as to create the slightest anxiety as to their result; much less such as for a moment to bring life even approximately into jeopardy. That this may not, however, be considered a partial estimate of the innocuous operation of digitalis, I may be permitted to adduce confirmatory evidence from two recent writers of established reputation. Dr. Holland, in his *Medical Notes and Reflections*, thus writes:—"Though employing the medicine somewhat largely in practice, I do not recollect a case in which I have seen any injurious consequences from this cause; none such, certainly, as were not speedily relieved by its discontinuance, and other means of easy adoption." And my friend, Dr. Pereira, in commenting

upon the same subject, says "I have used it, and seen others employ it most extensively and in full doses, and have rarely seen any dangerous consequences; and I believe, therefore, the effects of accumulation to be much less frequent than the statements of authors of repute would lead us to expect."

That frightful symptoms do, however, occasionally ensue upon, and that death has in a few instances resulted from, the administration of digitalis, recorded cases forbid me to deny: and once aware of this fact, it undoubtedly behoves the practitioner to be upon his guard concerning them. Should the pulse fall *far* below the healthy standard, as regards either force or frequency, or should it become unequal, irregular, or intermittent; should faintness or syncope supervene, the stomach become irritable or oppressed, the brain suffer, as indicated by giddiness, a cord-like sensation around the head, convulsions or stupor; then must the administration of digitalis be, of course, suspended, and stimulants—as, ammonia in the slighter cases, brandy, ether, &c. in those that are more severe—be given, until these untoward symptoms have passed away, and the sufferer been once more placed in a state of safety.

It has only occurred to me to see the slighter and less portentous of these symptoms as a consequence of foxglove; such as, inequality or intermittance of the pulse, loss of appetite, and frontal headache; either or all of which have at once subsided on discontinuing the medicine. I believe that such symptoms will only occur when the drug fails to act in its normal manner as a sedative or diuretic. If either of these effects are once obtained in a kindly manner, I then consider my patient safe from the poisonous operation of the drug. If, on the contrary, it does not evidence its usual effects within a few days, the medicine, I believe, accumulates in the system, and the patient is in danger of experiencing its poisonous influence.

I am therefore in the habit of prescribing digitalis, in the usual doses, for a week; and if, within that period, I perceive neither sedative nor diuretic effects, I then invariably desist from its administration. Let these effects, however, be once kindly induced, and the medicine may then be

continued with safety for a considerable period. In no one instance have I seen a bad effect follow the use of digitalis where the first consequences of its exhibition were the removal or material alleviation of prominent or distressing cardiac symptoms, whether this has been brought about by its operation as a sedative or as a diuretic.

A remedy, it has been well observed, can scarcely serve and hurt the constitution at the same time; and digitalis, where it gradually and in a kindly manner abates the heart's action, or stimulates the kidneys to increased secretion, never, according to my experience, accumulates, or produces, in a prominent degree, those alarming symptoms upon which writers have so amply dilated.

REMARKS ON THE PATHOLOGY
OF
IRITIS,

BY J. F. FRANCE,

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IT is not my intention, in the present Paper, to give a systematic account of iritis; but merely to offer to the reader's notice some points in the pathology and treatment of the disease, illustrated more especially by the accompanying cases. Since the time of Schmidt's publication upon this form of ophthalmic affection, in 1801, its history has been gradually filled up, and the phenomena presented in its course have been studiously noted; and yet I believe there is still room for useful amplification on the subject, grounded on more minute and sedulous observation of the successive stages and precise pathological foci of the complaint. The latter topic involves questions, which are occasionally of the highest importance, since clear discrimination of the exact seat of the morbid action he is called upon to treat must always be of essential value to the practitioner, as opening a clue to the cause and particular nature of every individual attack. Sometimes, indeed, it may be impossible, in a given instance, to ascertain the first boundaries of a disease: it may (and usually, in an unchecked course, will) involve more structures than one, and so eventually obliterate the diagnostic marks of its primary seat: yet in that numerous contingent, where disease yet retains its original distinctive characters, the power of appreciating them is at once, in a theoretic and practical point of view, an object of the first importance.

Iritis has been a disputed subject between those differing classes of medical writers who respectively love to generalize or subdivide: for it has been regarded in turn, by separate observers, as one disease, and as several; the diagnostic marks of its various forms have been described with pleasing lucidness by one writer, while another has denied the exist-

ence of such varieties, and of course, inferentially, the possibility of their being known apart. Discrepancies of observation, however, have at least one advantage—that they stimulate all fresh inquirers to note phenomena accurately and closely for themselves, in order to ascertain, for their own satisfaction, what is really consistent with nature; and so the questions at issue become at length, to a certain degree, settled by the concurrence of a majority. Thus has the discussion alluded to above, respecting the uniform or multiform character of iritis been, I conceive, determined by general, though certainly not unanimous consent, in favour of a division, founded on constitutional modifications, into the rheumatic or arthritic, the syphilitic, and the simple kinds. The last is very rare, as a primary affection, independently of wound, injury, or disturbance; but the two former are frequent, and possess peculiar habitudes, so marked as to entitle them fully, in the estimation of most practical observers, to separate consideration. It will therefore, be my object, in the ensuing pages, to illustrate, by cases, some of the grounds of this separation, more particularly as it regards syphilitic iritis; and to vindicate its propriety by contrast.

When the iris has been quickly altered as to its original colour, deprived of its brilliancy, and impaired in its motive power, with more or less obscurity of vision, and vascularity of the external tunics, it is said to be inflamed. These changes may, it is true, occur consecutively upon diseases of the retina: but the history, perhaps, of an obvious exciting cause of retinal inflammation, or, more frequently, the want of relation between the degree of the objective symptoms named above and the amount of amaurosis, together with the co-existence of a dilated instead of contracted pupil, a merely dull rather than a dull and much discoloured iris, &c., will suffice to distinguish these cases from those of pure iritis. Again, similar changes may occur when the choroid is the seat of disease; and it is probable that the term iritis is frequently bestowed upon an inflammation which has spread from that tunic. The judgment of the practitioner will, however, under such circumstances, be guided by the succession of the symptoms and adequacy of the degree of iritic inflammation to account for the visual disturbance, globular tenderness, temporal and

circumorbital pains, &c. "It is probable," says Mr. Travers, "that the choroid is the seat of the primary inflammation in those cases in which the changes upon the iris take place later than the signs of internal inflammation;" but inasmuch as, from the intimate vascular connection of the two structures, each soon participates in any serious inflammation arising in the other, the diagnosis, if not formed at an early period, may be neither easy nor satisfactory. When, however, the patient's uneasy feelings and affection of vision arise simultaneously and proportionately with the changes above mentioned in the aspect of the iris, we conclude, without hesitation, that that structure is the focus of the disease, which we name, accordingly, *iritis*. And since we find that persons labouring under syphilis form about one-half, perhaps more, of the whole number who present themselves the subjects of this disease; and that certain special additions are usually then made to the ordinary routine of symptoms under other circumstances; we seem to have abundant reason to acknowledge the existence of syphilitic *iritis*. I proceed, therefore, at once to consider some principal features of interest in the history of this disease, as exemplified in the cases subjoined.

First, as respects the age and constitutional state in which it commonly arises. Of course, the immensely preponderating majority of cases occur in persons about the earlier and middle periods of manhood; the ages, in short, at which, from circumstances, men are most prone to become affected with the constitutional taint. Old age is, however, by no means exempt, as shewn in the instance of the woman, Mary P—, a widow, aged upwards of fifty, whose firm asseveration of innocence was rendered highly improbable by inspection of the eye alone, but conclusively refuted by the co-existence of a corresponding cutaneous eruption. In these elderly subjects, the syphilitic disease is apt to be associated with a rheumatic complication, imparting more dulness to the conjunctival vessels, and predisposing to a readier and more copious effusion of lymph into the pupillary aperture: and such complication, I believe, existed in this very case, as well as in that of Catherine B—, aged 42.

Arthritic iritis may also occur in middle age, or even in youth (especially that gonorrhœal form of which I shall again speak); but, in the majority of instances, it is met with in elderly people, with whom syphilis is, on the other hand, comparatively rare.

The individuals who have syphilitic iritis are very generally, in hospital practice at least, persons of decidedly unhealthy, and frequently highly cachectic condition of system—men of dissolute and debauched habits; or women, whose mental and bodily constitutions have been alike spoiled by the excesses of an unhappy trade. These are the worst subjects for inflammatory disease—the worst for active remedial treatment; but, unfortunately, they are most prone to the former, which imperatively demands when it attacks the eye, the employment, with greater or less vigour, of the latter. The most solicitous care and nicest judgment are then required to reconcile, for the patient's greatest benefit, the counter-indications of treatment seemingly afforded by constitutional debility and acute local disease. Arthritic inflammation of the eye also generally affects those of enfeebled, though not shattered constitutions: but probably this observation may less obtain among the wealthier classes, since at least three-fourths of the entire number of patients from among the London poor, who apply for relief of ophthalmic disease, are essentially debilitated subjects, and require some form or other of tonic treatment: debilitated they may be, sometimes by profligate habits, but if not from that cause, from over labour, confinement, or privation; for it is a painfully frequent answer to our recommendations to follow up the use of medicine by some degree of relaxation and an improved diet—that it is out of the individual's power to comply.

As respects the complications most frequently found in combination with iritis, syphilitic and rheumatic, the latter implicates usually the sclerotic, conjunctiva, and cornea, more extensively than the former, which again is apt to extend to the choroid membrane,—dispositions elucidated by consideration of the pathology of the two diseases respectively: it should, however, be borne in mind, that either variety occasionally involves several of these structures at once.

Of the subjective symptoms, obscurity or loss of vision is a symptom or consequence of iritis of all kinds; pain is apt to be more confined to the temple and forehead in syphilitic cases.

None of the differences hitherto stated to exist between these two varieties of disease could be sufficient warranty for viewing them separately; but the peculiarities observable in the appearances of each first led to their being regarded, and still justifies their being considered, as distinct. In well-marked cases of syphilitic iritis, the first morbid changes in the membrane itself are commonly observed at or close to the margin of the pupil, where the iris is found not only to have its mobility impaired and its brilliancy tarnished, but the sharpness of that margin lost; and as the disease advances, the natural colour of the iris, at one or more inflamed points, which appear thickened, is seen to give place to the development of a dusky reddish-brown hue (frequently described by the terms foxy- or cinnamon-colour), which has been correctly deemed an almost absolute *gnomon* of syphilis.* This colour, as the disease progresses and the tumefaction becomes greater, is usually rendered still more striking; but it sometimes is obscured, to a certain extent, by fibrin effused into the cavity of the anterior chamber, which presents the ordinary light-yellow colour of similar effusions elsewhere, or, in very acute cases, may be discoloured by admixture of red particles of blood, and remotely simulate the reddish swelling of the iris just spoken of. So great participation of the aqueous membrane is, however, far from common in syphilitic iritis, in which, generally, exudation takes place from the free surface of that membrane only in sufficient quantity to attach parts of the edge of the pupil to the capsule of the lens, and perhaps cover, more or less, its contracted aperture. Very often, indeed, attachment of the edge of the pupil to the anterior capsule, at the situation of the most inflamed portions of the iris, is the only evidence of any morbid effusion whatever upon the free surface of the membrane of the aqueous

* It is a curious fact, that a similar tinge of reddish brown (copper colour) characterizes syphilitic cutaneous eruptions. More truth is conveyed than was ever intended in the remark—

Heu! Quam difficile est crimen non prodere vultu!

humour; and the changes just described in the aspect of the iris itself are most frequently left open to view.

The following are fair examples of mild and of severe cases of ordinary character:—

CASE 1.

DANIEL D——, aged 21, was admitted June 11, with sub-acute iritis of the left eye, after syphilis: a similar attack had been cured by mercury about three months before. Eight or nine days previously to his application, the eye again became inflamed; and on admission, the iris, originally of hazel colour, was dull, and, at parts, which were slightly swollen, reddish; its pupillary edge being rounded: the pupil was little disfigured, and, at least in part contractile: the aqueous membrane was involved but little: injection of sclerotic was slight, conjunctivitis considerable: there was circumorbital pain, and vision only sufficient for guidance in walking.

P. Hydrarg. Chl. Co. gr. v. omni nocte.

Jul. Rhei Com. ċ. Vin. Colch. m xxv. ter die.

Coloc. ċ Hydrarg. Chl. gr. xv. statim.

Applicentur Cucurbitulæ Cruentæ temporis ad ʒxij.; et Extr. Bellad. circum palpebras.

The quantity of mercurial was subsequently increased, and the iodide of potassium afterwards given. The iris recovered its colour and motions perfectly; and although sight was but slowly restored, probably in consequence of the injury inflicted by the previous attack, the patient was eventually discharged, cured.

CASE 2.

HENRY C——, aged 23, was admitted May 6. He had had chancres four months before, and still had remains of syphilitic lichen on the shoulders; had also had sore throat, and been under mercurial treatment. Ten days previously to admission, the right eye inflamed, at first with pain confined to the globe, but latterly with pain in the globe and at the temple, aggravated at night. For the last four days he had only been able to distinguish light from darkness; but had been under no effective treatment. The conjunctiva was slightly

vascular; there was zonular sclerotic injection; the cornea was pretty clear; but there was general haze of the anterior chamber. The pupil was not contracted, but irregular, drawn upwards, and fixed; the iris much thickened and puckered, and at one or two spots reddish; the patient could only perceive light and darkness.

Applic. Cucurb. Cruentæ temp. ad 3xij.

Pulv. Jalap. Co. ʒij. st.

P. Hydrarg. gr. v. Opii. gr. ¼. bis die.

Pulv. Ipecac. gr. iij. ter die.

16. Gums were sore; iris and aqueous membrane fast recovering brilliancy and natural appearance. The swelling of iris, and the adhesions, had been removed, and the patient could now read large print.

30. Some dimness yet lingered over distant objects; but all appearances of disease were gone.

CASE 3.

JOHN A—, aged 35, was admitted April 1, 1844, with syphilitic iritis of both eyes, of one week's duration, the gums being at the time tender from the use of mercury for syphilis. In the left eye the conjunctiva round the cornea was congested, and sight was dim. In the right, conjunctival inflammation was so considerable as to hide almost completely the sclerotic; zonular injection of that membrane was, however, visible at intervals: cornea clear: general dulness of anterior chamber: iris, naturally light blue, presented a brownish yellow tinge, and thickened margin: pupil just perceptibly mobile, of medium size, and central; a shred of lymph passing from its lower and outer part to the capsule of lens: great tenderness of globe: pain in globe, brow, and temple: both eyes intolerant of light: vision much obscured by fog; patient could not see to read half-inch letters.

Ol. Terebinth ʒi. ex M. Camph. ter die.

Applic. Cucurb. Cruent. temp. ad 3vi.; et Extr. Bellad. circum palpeb.

4. Left eye: more vascularity of both conjunctiva and sclerotic, but anterior chamber clear, and iris active. Right eye: aqueous membrane clearer; but discolouration at pupil—
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lary edge of iris greater, and assuming a reddish hue: thickening continued: pupil, however, still acted imperfectly, where not confined by the tags of lymph: sight decidedly clearer day by day: pain was now confined to globe, but much increased by slight pressure: patient had been troubled with strangury, and passed some blood with urine; but both symptoms were mitigated by free use of barley water.

7. Empl. Lyttæ pone singulas aures applicandum.

9. Left eye: dulness and indolence of iris: pupil large: considerable conjunctival and sclerotic vascularity: slight photophobia. Right eye: aqueous membrane nearly of healthy transparency, but iris not yet quite brilliant: pupil spacious: vascularity of superficial tunics rapidly subsiding: no tenderness or pain about globe or orbit: sight much improved: slight intolerance: gums still tender. Hæmaturia, with pain in the loins, having again supervened, and not being obviated by diluents, camphor, &c., I was compelled to discontinue the turpentine.

Hydrarg. Chl. gr. ss. Antim. Pot. Tart. gr. ½. Extr. Conii, gr. iv. bis die.

Dec. Sarzæ c Extr. ter die.

12. Inflammation still subsiding in the right eye, which was free from pain or tenderness, and the sight of it so restored, that the patient could see ordinary print. The left eye, however, was worse: its vascularity increased: the anterior chamber dull, with thickening and brownish discolouration of several points of the pupillary margin of the iris: pupil of medium size, but drawn upwards and outwards, and irregular: globe very tender: pain at temple and brow: photophobia: sight much impaired: urine again in normal condition: mouth sore.

Hydrarg Chl. gr. ij. Opii. gr. ss. 4tis horis.

Adde Potass. Iod. gr. iv. sing. dosib. misturæ.

19. Repet. pilula bis die; et pergat in usu misturæ.

23. External vascularity now chronic in character: anterior chambers nearly perfectly clear: pupils circular and moveable, dilated by the belladonna: vision of right eye as

good as ever; that of left indistinct: left eye still slightly tender: gums sore.

May 3. A slight fog still impeded the vision of the left eye: sight of right eye, and brilliancy of irides, perfect; the pupils active, circular, and free, except for a small adhesion at the lower part of right pupil.

CASE 4.

ALFRED G——, aged 35, a seaman, was admitted Dec. 15. He stated that he had not had syphilis for four years, but this disavowal could not be depended upon: he was not subject to rheumatism. His right eye inflamed seven days before admission; but he had not been under treatment for it: there was severe conjunctivitis; the sclerotic hidden in consequence: cornea clear: aqueous membrane muddy: iris dull and discoloured, its edge irregular and thickened: pupil contracted; very sluggish; drawn upwards and inwards: no pain. The patient could but just distinguish light from darkness: his tongue was white and indented; his constitution debilitated.

Hydrarg. Chl. Opii, aa gr. i. ter die.

20. Omit. Pil.

Jul. Iodinii c Extr. Sarzæ, ter die.

Jan. 4. Mouth had been made sore, and so continued: some lingering vascularity of conjunctiva of brick-red colour: iris recovering brilliancy; but pupil fixed and contracted: vision much improved, but still foggy.

12. Fresh inflammation: haziness of anterior chamber increased.

He again improved under cupping and blistering, with mild mercurials and tonics, until Feb. 27; when another relapse occurred; and, on March 15, a third, when vision became as bad as on first admission, blood was effused into the anterior chamber, and the iris became dull and greenish. He was discharged on the 28th of April, with fixed and obstructed pupil; iris discoloured, puckered, and bagged forwards; sclerotic thinned, and yielding at position of the ciliary body, in extensive staphylomatous protrusion: amaurosis almost complete. A key to the extraordinary obstinacy and reiterated recurrence of disease, in this case, was discovered,

in the fact that the patient had been drinking freely of gin surreptitiously introduced into the ward.

The conjunctiva and sclerotic, increased vascularity of which always occurs in syphilitic iritis, have been thought to correspond with, and partake in, the peculiar colour of the iris. The idea seems to have arisen, upon a cursory inspection, partly from the loss, in these cases, of an immediate object of contrast in a blue or hazel iris, and partly from the colour of the inflamed conjunctiva being different from that which it exhibits in arthritic inflammation, when its tint is decidedly peculiar. The colour of these tunics, injected with blood in syphilitic iritis, is the same as that which they reflect under common inflammation, only not heightened by relief from an iris of natural or nearly natural colour.

Displacement of the pupil upwards and inwards was once thought diagnostic of syphilitic iritis; but if most common in, is certainly not confined to, it. There is another objective symptom, however, illustrated in the case of M. P——, which, when met with, is strongly presumptive of the specific nature of the disease, viz. the occurrence of very minute dark-brown specks in the lower segment of the substance of the cornea: they appear circular in form, with well-defined margins, and their production seems independent of any general haziness or inflammation of the corneal structure; these characters mark them as quite distinct from those mottlings described by Mr. Wardrop as a consequence of aquo-capsulitis. Their appearance is far from constant in this disease; but whenever they are detected, a syphilitic origin may very confidently be predicated of the case.

Previously to considering more in detail the characters of syphilitic iritis, afforded by inspection of the changes taking place in the membrane itself, I will describe, for the sake of comparison, the ordinary aspect of the iris, under arthritic inflammation. Here, dulness of the anterior chamber is much more extensive and considerable; and if the disease be not quickly checked, the entire circle of pupillary margin is soon fixed, by lymph, to the capsule of the lens; and even the whole area of the pupil may be thickly overspread with this

effusion, which presents very generally a white or yellowish-white colour. The surface of the iris too will be found not *partially* discoloured in rusty-looking spots, but uniform in its alteration to a greenish or yellowish hue; a circumstance of considerable import, as contrasting with syphilitic discolouration: and lastly, whatever tumefaction of the iris there may be, and it is usually very slight, will be observed to partake of the same character, not being confined to a spot here and there, but general. The fact is, that in the immense majority of cases of arthritic iritis, the lining of the anterior chamber and serous covering of the iris are, in common with the sclerotic, the principal seat of disease; and it is remarkable how closely herein it tallies with the recognised disposition of rheumatic inflammation in other regions to affect free membranous surfaces (as those of the synovial cavities and pericardium), and then give rise to abundant effusion, which is unknown as an accompaniment of rheumatism of fibrous and muscular tissue. Thus the large participation of the aqueous membrane in the inflammation called arthritic iritis, is manifested by copious effusion into its cavity, generally fibrinous, but sometimes serous; while the affection of the muscular structure is inferred only from its proximity, the contracted pupil, aching pain, and especially the exacerbation of that pain occasionally produced by the application of belladonna. Now, it is to the circumstance that syphilitic iritis, on the contrary, is, for the most part, essentially an inflammation of the parenchymatous structure, that the disease owes its peculiar character of producing tumefaction or thickening; and, in proportion as it departs from this type are the chief marks deemed diagnostic either ill-developed or absent. The tuberculation of the membrane, and its cinnamon discolouration, (which are merely the ordinary '*notæ inflammationis tumor et rubor*' of Celsus, modified by texture and specific action,) are owing to this, and yet are commonly accounted for in just the opposite way; for the tubercles are generally regarded as attachments of lymph to the free surface of the iris, and their colour is ascribed to admixture of some extravasated red particles, or (as by Mr. Lawrence, who yet seems, with Beer, to recognise distinctly the inter-

stitial origin of the tubercles), to the combination of the colour of lymph with that natural to the iris. Of these two suppositions, the former is certainly the more tenable; for a combination of the faint straw-colour of lymph with grey, blue, hazel, or brown, can never yield a tinge of red—one of the three primitive colours.

When, however, a normal case of syphilitic iritis is examined closely in the earliest stage, it is clear to demonstration, that the irregularities of the surface of the iris are due to its proper substance being, at certain parts, swollen and infiltrated, because the surface, though irregular in level, is continuous, and the confines of the swellings are lost insensibly in the surrounding comparatively healthy part: and if the case be attentively watched as the disease advances, it may, for a considerable time, remain equally evident that any morbid deposit there may be is interstitial. The tumefaction at one, or more, of these points, however, sometimes greatly increases, generally less in superficial area than in elevation; and though at first it barely rises above the surrounding level, it may eventually proceed to such extent, owing to the loose and distensible texture of the iris, as to constitute a tubercle, projecting high above the general plane, and sometimes even overlapping its own base. In the latter event, as also when a film of fibrin is effused over the surface of the tubercle, from sympathetic inflammation of the aqueous membrane (an occasional but not common circumstance), the real origin of the tubercle may be for a time obscured; yet, as it subsides at length, and the free lymph is absorbed, the natural reticular appearance of the anterior surface of the iris again comes into view, and the roots of the tubercle (so to speak) are seen to lie beneath that surface. The two following cases afford good illustrations of syphilitic tubercle of the iris.

CASE 5.

MARY L.—, aged 19, admitted April 26, 1844. She had had syphilitic sores two years before, and, on admission, had still syphilitic lichen. Right eye: vascularity of superficial tunics and photophobia: iris dull, and presenting, on its lower pupillary margin, a very projecting tubercle with whitened apex,

ready, apparently, to burst and discharge matter into the anterior chamber. This tubercle appeared to be a growth from the iris, not a deposit upon it. Sight very dim: globe tender: severe pain at temple.

Potass Iodidi. gr. iv. ex Dec. Sarzæ C. ter die.

Applic. Cucurb. Cruent. temp. ad 3vj.; et Extr. Bellad. circum palpebras.

27. Hydr. c̄ Cret. gr. v. P. Opii gr. ss. t. d.; et pergat in usu misturæ.

30. Tubercle, instead of discharging its contents, was subsiding, and even presented, at its apex, a hollow resembling that of a cupped and buffy coagulum; its base, appearing indistinctly vascular, was of slightly reddish-brown colour, and the neighbouring surface of iris rose upon it. There was some free lymph on the capsule of the lens: photophobia and conjunctival inflammation still considerable: sight rather clearer: globe less tender upon pressure.

May 6. Site of tubercle now level: a broad band of brown lymph glues the edge of the pupil at that place to the capsule: there is another adhesion at the upper margin of the pupil. Iris brilliant, and of natural colour: sight impeded by a thin mist only: eruption gone.

10. Sight improving. Discharged, convalescent.

CASE 6.

PETER T——, aged 30, came under my care May 1, his eye having been inflamed six or seven days. He had had syphilis about a year before. There was high vascularity of conjunctiva and sclerotic; but the cornea and aqueous membrane were clear. At nearly two-thirds of the circumference of the pupil the iris was discoloured, reddish-brown, and thickened: the thickening was interstitial as shewn by the surface of the iris around advancing to cover these swollen parts, and there was an indistinct appearance of vascularity at the lower part of the thickened iris. The pupil was fixed, of medium size, and its area clear, there being no effusion of free lymph visible: circumorbital pain: sight very dim.

Hydrarg Chl. gr. i. Extr. Conii, gr. v. ter die.

Appl. Cucurb. Cru. temp. ad 3vij.; et Extr. Bellad. circ. palp.

3. Repetatur Pilula 6tis horis; et pergat in usu medicament.

6. Zonular sclerotic injection continues : discolouration and swelling of iris nearly disappeared : pupil well dilated, but mis-shapen from a tag of adhesion to the capsule at the lower, and another at the inner edge.

10. No adhesion now perceptible : the pupil is circular and contractile ; but the edge of the iris has not quite regained its sharpness and natural tint at the temporal side : sclerotic injection very trivial ; mouth quite sore.

19. Convalescent.

Simultaneously with local tumefaction, a rusty, reddish-brown colour, as already described, is most frequently assumed at the same points, especially in irides naturally hazel or brown ; and it arises from one or more vessels, distended with red blood, ramifying in the aqueous membrane over those inflamed points. Not quite so soon as the colour appears is the source whence it springs perceptible by the eye : a certain degree of inflammatory excitement must first be attained ; in other words, the distention and dilatation of those minute vessels must reach a certain pitch before they can be recognised even with artificial aids. In moderately severe cases this soon takes place ; and if, then, the eye be inspected closely in a good light, and with the assistance of a powerful lens, (the cornea and aqueous membrane being clear, and photophobia not great,) sometimes only one or two, but occasionally a complete network of vessels become manifest, ramifying over the swollen parts of the iris, and evidently imparting to them the rusty red colour which they exhibit.* The appearances I now describe may be detected in so large a proportion of cases where this dusky colour is developed, that I cannot doubt that the same hue arises from the same cause, when, from the mildness of the attack, and the consequent slighter vascular distention, the individual vessels elude observation, or intolerance of light forbids that close examination and exposure of the globe which are necessary, in most cases, for their recognition. In some rare cases these vessels are so gorged, crossing over a well-grown tubercle, that the naked eye can scarcely fail to notice them : in such instances they have, in fact, been

* I have never met with a description of this fact as one of the ordinary phenomena of the disease ; and believe the observation to be original.

observed, and been ascribed to organization having taken place in lymph thrown out into the anterior chamber from the free surface of the iris. To this hypothesis, though sanctioned by very high authority, I must object that it is at variance with the results of early and patient investigation, and with analogy; for fibrin effused during an attack of peritonitis, or pleuritis, or even rheumatic iritis, is not endowed with appreciable vascularity, until after the lapse of a lengthened period; not, in short, until all active disease has subsided: and lastly, it is opposed to all experience, that a structure once so fully organized should disappear, and be removed in a few days by the influence of any remedy, even so powerful a one as mercury. It is, on the other hand, worthy of remark, in connection with this part of the subject, that, in other instances, one grand character of the action of the true syphilitic virus seems to be, the development of disease, whether marked by ulceration or effusion in the cellular tissue and parenchyma of organs, examples of which may be adduced in the so-called Hunterian chancre surrounded by abundant but circumscribed fibrinous interstitial effusion; in nodes; in the tuberculated forms of syphilitic cutaneous eruption; in the disease known as chronic carbuncle, or, par excellence, cellular membranous ulcer (ordinarily of syphilitic origin): syphilitic ulcers of the throat, again, are partly recognised by their extending into the substance of the tonsil, &c. The following cases exemplify the pathological changes just pourtrayed.

CASE 7.

THOMAS M——, aged 19, was admitted May 22, with syphilitic eruption and inflammation of the eye of ten days' duration, having nine months before had chancre. Irides naturally hazel: sight very dim, insufficient to read: pain in temple and globe of eye.

P. Hydrarg. Chl. Co. gr. v. o. n.

Sodæ sesquicarb. ℥i. ex Dec. Cinch. t. d.

Applic. Ext. Bellad. circ. palp.

31. A large isolated tubercle had formed on the upper pupillary border of the iris.

June 6. Tubercle, lessened in size, is of whitish-brown

colour, with tinge of red. On close inspection with lens, the ramifications of blood-vessels are seen upon it, forming a network, between the meshes of which the whitish colour of the lymph appears. The base of the tubercle is lost insensibly at its upper and lateral borders in the adjacent surface of iris: at its lower part, where it abuts upon the pupil, it is, of course, abruptly terminated. The remainder of the iris is brilliant: the pupil dilated by belladonna: vascularity of external tunics inconsiderable: sight improved greatly: the patient can now read small print.

The tubercle remained perceptibly vascular for some days, when it gradually sank down and disappeared, under the continuance of the same treatment.

This man's eye continued well until about July the 9th, when he began to complain again of dimness of sight; a few straggling vessels upon the conjunctiva and sclerotic became distended with red blood, and a slight thickening of the edge of the pupil took place.

July 10. Pil. Hydrarg. Chl. Co. gr. v. omni nocte.

12. Hydrarg. Chl. gr. ij. Opii, gr. $\frac{1}{4}$ ter die.

15. A tubercle, which had formed at nasal side of iris, has suppurated and burst, so that there is hypopyon; the anterior chamber is very dull and hazy.

17. The anterior chamber being again clear, the iris is now distinctly under observation: the broad-based tubercle abutting upon the pupil appears, on cursory inspection, of rusty colour, intermixed with dull white: on examination with glass, the rusty-coloured portion is found to be covered with a mesh of minute blood-vessels, beneath which the texture of the iris seems distended with light straw-coloured lymph, forming the substance of the swelling. The side of the tubercle next the pupil presents a ragged ulcerated spot, from which, probably, the matter visible at the bottom of the anterior chamber made its escape. The general surface of the iris is dull, but tumefaction is confined to the neighbourhood of the tubercle; around which, also, there may be discerned some minute deposits of opalescent effusion on the free surface of the aqueous membrane: pupil elongated and hazy, but black: zonular vascularity of superficial tunics:

tenderness of globe: sight, a day or two since, only sufficient to tell light from darkness: he can now distinguish persons.

19. Tubercle perhaps somewhat less in size; its vascularity less conspicuous, but still considerable and unequivocal; its reddish-brown colour simultaneously fading at the most prominent part, where the yellowish hue of the lymph, covered only by the aqueous membrane, is predominant; but at the base of the tubercle the cinnamon colour is still paramount: hypopyon in great part absorbed: vision much improved. The man's mouth having been made sore, the mercurial is continued in diminished doses.

July 22. Tubercle little more than half its former size, and of yellowish-white colour: vascularity of its surface no longer distinct: hypopyon quite gone: vision nearly perfect. The patient is rapidly convalescing.

31. All appearance of inflammation is gone: the iris is restored to its natural level and colour; but where the tubercle was situated, it is attached by a broad band of adhesion to the capsule of the lens: the vision is perfect, except that distant objects are not quite distinct.

CASE 8.

WILLIAM F—, aged 35, came under my care on April 30, having previously been under the physician for a week or ten days for rheumatic pains, for which he had taken the iodide of potassium, and probably mercury too, as his gums were sore. There were relics of lichen on his shoulders, which, taken in conjunction with the pains in his limbs, and the characteristic nature of the inflammation of the iris, could leave no doubt that the patient's assurance that he had never contracted syphilis was incorrect. The state of his right eye was as follows:—Conjunctiva and sclerotic around cornea both injected: cornea, aqueous membrane, and area of pupil, dull: iris discoloured, more greenish than natural; at its upper and nasal pupillary border considerably swollen, and reddish-brown in colour. This portion of the membrane, when closely inspected by the assistance of a lens, exhibited one or two red blood-vessels ramifying over it: the elevation of the surface at this spot was evidently owing to interstitial, not superimposed deposit, the surface being unbroken and

continuous. Pupil contracted, mis-shapen, fixed : sight dim : no pain of any consequence about the globe or orbit.

Hydrarg. Chl. gr. i. Extr. Conii, gr. v. t. d.

Repet. Dec Sarzæ c̄ Pot. Iod.

Applic. Cucurb. Cruent. temp. ad 3x. ; et. Ext. Bellad. circ. palp.

May 3. Upper half of anterior chamber clear, but dulness of aqueous membrane continues at lower half: pupil more puckered and irregular, from partial dilatation. The reddish-brown thickened spot of iris is, in consequence of the brightness of the day, much more distinctly overspread with minute blood-vessels. Discolouration is commencing at another smaller spot, where, likewise, a vessel is rendered visible by a lens. The internal two-thirds of pupil are adherent: at its lower part there are one or two points where small effusions of lymph have occurred, which present a whitish colour: sight clearer.

Appl. Cuc. Cru. ad 3vij.—Omit. Mist.

Cal. gr. ij. Extr. Conii, gr. v. t. d.

Low diet enjoined.

6. Mouth now quite sore: disease seems stationary as regards dulness of anterior chamber, except that a small deposit of lymph has formed on the lower part of the corneal lining: reddish discolouration of iris is, however, less decided, and thickening of that membrane seems less: vision is improving daily.

Hydrarg. Chl. gr. i. Extr. Conii, gr. v. nocte maneq.

Dec. Sarzæ c̄ Extr. c̄ Potass. Iodidi, gr. iij. t. d.

Empl. Lyttæ pone aurem applicetur.

7. Mouth very sore, and salivary secretion much augmented. A marked improvement has taken place since yesterday: the aqueous membrane is recovering its brilliancy and transparency, though still hazy at the lower part: the tumefaction of the iris is subsiding, and its natural plane surface being restored: adhesions of the pupil, however, continue extensive.

10. Repet. Pil. alternis noctibus.—Repetatur Mistura.

15. Brilliancy of iris, and its level surface, quite restored; its natural bright blue colour not yet entirely regained. Very slight injection of the superficial tunics now remains:

the pupil continues adherent at the inner part : its area is still dull, and there is some dimness of vision, although the patient can tell the hour by a watch.

24. Convalescent.

CASE 9.

A. B——, aged 40, was admitted June 29, shortly after an attack of syphilis, with lichen over his body, and inflammation of the right eye of ten days' standing. On admission, the conjunctiva and sclerotic were vascular : there was slight dimness of aqueous membrane : the iris was dull, and altered in colour ; at several points near the pupil presenting a reddish hue ; and one of these points, examined with a lens, evidently derived its colour from small vessels, carrying red blood, ramifying upon it. The iris was thickened at the same spot ; the pupil contracted ; and vision greatly impaired.

Pil. Hydrarg. gr. v. nocte maneque.—Dec. Sarzæ c̄ Extr. t. d.

Applic. Cucurb. Cruentæ temp. ad 3 xij. ; et Extr. Bellad. circ. palp.

July 6. Pupil well dilated : brilliancy, colour, and level of iris nearly natural : no vascularity of its surface now perceptible : sight nearly perfect.

The patient was quite well when discharged.

CASE 10.

ANNE M——, aged 23, applied June 7, suffering under syphilitic eruption, sore throat, and inflammation of both eyes. The right eye had been inflamed for two months ; but the sight was not impaired until one week before admission, when the left eye also became bad : from this period, therefore, the iritic inflammation must be dated. Left eye : conjunctiva and sclerotic injected : anterior chamber quite clear : pupil contractile, except at the lower and inner part, where synechia posterior had occurred. Right eye : zonular conjunctivitis : cornea and aqueous membrane clear : the pupil irregular and fixed, but its area clear. Near the temporal and lower margin of the pupil the iris was swollen so as to form a tubercle of rusty reddish-brown colour. Inspected with the aid of a lens, this tubercle was seen to have its surface covered by a network of red vessels, by which the colour seemed imparted ; since between their meshes the swelling exhibited the

yellowish colour of the fibrinous effusion by which the iris was tumefied. There was pain in the globes, about the temples, and forehead.

I regret having subsequently lost sight of this patient.

CASE 11.

ALFRED B——, aged 25, was admitted June 24, having had syphilis three months before: a fortnight previously to admission the left eye inflamed, after exposure to a draught; the pain was at first trifling, but subsequently became considerable. The conjunctiva and sclerotic were inflamed: there was hypopyon, which gravitated when the head was inclined sideways: the pupil was immoveable. On the nasal portion of the iris, near the edge of the pupil, a large tubercle had formed, apparently beneath the surface of the aqueous membrane, as there were turgid blood-vessels ramifying over it, and producing the foxy colour considered characteristic of syphilitic iritis: these vessels were easily seen with a bi-convex glass.

Pil. Antim. Opiat. fort. \bar{c} Cal. gr. ij. ter die.

Applic. Hirud. x. temp. sinist.—Belladonna.

27. Empl. Lyttæ temp. sinist.—Patient permitted to continue middle diet.

July 2. Pupil enlarged and oval: hypopyon gone.

19. Two blisters have been applied. The tubercle has disappeared; but the iris is adherent to the capsule of the lens at its former site.

26. Until four days since the succus belladonnæ was used as a collyrium, but was not satisfactory in its effect. The extract was then applied in the usual way, and with greater success, the pupil having dilated much more, and vision being improved.

Aug. 17. The adhesion to the capsule continues: sight is almost perfect.

20. Discharged.

CASE 12.

JAMES U——, aged 26, admitted June 10, had syphilis four months ago, and has lichen at present. The left eye inflamed eight days since, with pain at the supraorbital region, and

dimness of sight. The iris, naturally grey, is dull and discoloured; and at two spots, on opposite sides of the pupil, it is much raised, and of reddish-brown colour. This colour is shewn, by the use of a lens, to arise from meshes of blood-vessels passing over the elevations: the edge of the pupil is thickened: it acts slightly.

Applic. Cucurb. Cruentæ ad 3x.; et Extr. Bellad.

11. Hydrarg. c̄ Cret. gr. ij. Pil. Rhei Comp. gr. viij. bis hebđ.

Jul. Rhei. Co. c̄ Pot. Iod. gr. ij.; et Vin. Colch. m xx. t. d.

17. Inflammation subsiding; but one vascular tubercle still exists; remainder of iris natural.

July 8. Convalescent.

CASE 13.

CATHERINE B—, aged 42, a married woman, was admitted May 3, for syphilitic iritis and aquo-capsulitis of two weeks' duration. The sight has been failing, with spectra of muscæ and gauze for four months, and amaurosis had advanced, before any inflammatory appearances existed in the eye, to such degree that she was unable to guide herself. She has a syphilitic eruption, which has been for six months spread over the face, arms, and shoulders; has had a chronic sore throat up to a fortnight ago; and for one week experienced pains in the limbs, aggravated at night time: for years she has been subject to rheumatism, but is not aware of ever having had a chancre or bubo. Right eye: general conjunctivitis: surface of cornea dull: aqueous membrane hazy: pupil of medium size and circular, but indolent, if not fixed; its area dull: several points of iris thickened and reddened by very minute vessels, which are only cognizable by help of glass. Left eye generally in same condition: meshes of delicate vessels may be seen ramifying on the iris, near to its pupillary border, and creating reddish-brown discolouration of the membrane; there is much interstitial thickening of the iris at these vascular spots, but no effusion can be discovered on the free surface, although the pupil is fixed: for four days she has been completely blind: pain in the temples has been severe, but is now mitigated: she has taken mercury, and her mouth is a little sore.

Pil. Antim. Opiat. Mit. \bar{c} . Cal. gr. i. ter die.

Dec. Sarzæ \bar{c} Potass. Iodidi, gr. iij. ter die.

Coloc. \bar{c} Cal. g. xv. st.

Appl. Cucurb. Cruentæ temp. ad $\frac{3}{4}$ v. ; et Ext. Bellad. circ. palp.

Low diet.

6. Right eye: little conjunctival inflammation: aqueous membrane dull over the larger part, and area of pupil very dull: inner and upper third of iris still distinctly vascular: vision much improved. Left eye: zonular conjunctivitis considerable, but stopping short of corneal margin, so as to form the white annular space around the cornea often deemed indicative of rheumatic inflammation: aqueous membrane dull. The vascularity of the iris of the left eye has ceased to be distinct; and in both irides the thickening has, in great part, subsided: sight improved: no tenderness of globe: mouth sore.

Augeatur dosis Potass. Iodidi ad gr. iv. ter die.

Empl. Lyttæ pone aurem dextram applicetur.

15. Considerable improvement has taken place: a few large congested veins yet remain in the conjunctiva: aqueous membrane has cleared: irides present more yellow tinge than natural, but they are free from all signs of present inflammation: pupils spacious, but dull and glaucomatous: their edges in part adherent.

24. Left pupil much dilated by the continued use of belladonna, which has partly separated the adhesions, leaving several brownish spots of uvea on the capsule of the lens: glaucoma is not removed. This patient remained some time longer under treatment for the amaurosis which had preceded the attack of iritic inflammation, and her vision was sufficiently restored for a time to enable her to find her way about, and tell persons at some distance; but she relapsed again.

CASE 14.

MARY P——, aged 53, a widow, and by occupation a washerwoman, admitted April 24, has been subject to rheumatism but denies ever having been affected with syphilis: she, however, has, at the present moment, an eruption of tubercula, lichen on the arms and body, in Mr. Morgan's and my own opinion decidedly syphilitic, and has recently had exfoliation

of the palate bones; but mercury having been freely exhibited for the cure of sore throat may possibly have contributed to the disease of bone. The appearances of ophthalmic inflammation are, however, of themselves, most strongly presumptive, if not satisfactorily demonstrative, of a syphilitic taint, modified, it may be, by a rheumatic diathesis: the inflammation arose three weeks ago. Right eye: chronic zonular, conjunctival and sclerotic injection: cornea clear: slight dulness of lower segment of aqueous membrane: brilliancy of iris lost; and two or three brown, apparently morbid spots visible upon its surface: pupil of medium size, but fixed and triangular; its area dull: no tenderness of globe: some circumorbital pain: vision impaired, but the patient can find her way about pretty well. Left eye: much more conjunctival vascularity, the sclerotic being entirely concealed by it: cornea clear: aqueous membrane universally very dull: a large effusion of whitish pus, great part of which gravitates freely to the bottom of the anterior chamber: surface of iris very dull; nasal side of its pupillary margin (as far as haze admits of observation) either thickened or extensively coated with lymph, which is, at two or three points, discoloured with blood, but vascularity is not discernible: pupil, of medium size, seems fixed; its area, by a lateral view, appears moderately clear: some tenderness of globe: constant and exceedingly severe pain at forehead and temple, aggravated at night: the patient can but just perceive large objects; she has been salivated, blistered, and leeches.

Hydr. c̄ Cret. c̄ Extr. Conii, āā gr. iifs. o. n.

Pulv. Cinch. gr. v. Sodæ Sesquicarb. ℥i. Pulv. Colch. gr. ij.
ex Jul. Menthæ, ter die.

25. Adde. sing. dosib. mist. Tinct Hyoscy. m xx.

Repet. Pil. ter die.

Applic. Empl. Lyttæ. sing. temp.

26. Repet. Pil. bis die.

30. Right eye freer from pain, and sight clearer; but injection of external tunics, dulness of anterior chamber, and fixity of pupil continue. Left eye: external aspect much as before: lymph in anterior chamber extends above pupil at nasal side; at the centre it covers the lower half of pupil: the

fluid portion gravitates more slowly: upper margin of pupil is brownish red, and thickened; and the whole anterior chamber very misty: pain, rather diminished, is now dull, throbbing, and constant: only a glimpse of light perceived: gums vascular, and mouth sore.

May 3. Left eye: the lymph is being rapidly absorbed, but a considerable quantity yet remains; and some, gravitating to the bottom of the anterior chamber, still constitutes hypopyon: that portion of pupil which is not entirely hidden by the effusion preserves a brownish hue (less bright than that usually observed in these cases), and seems encrusted with a coating of fibrin.

6. Right iris brilliant, and of a natural colour: pupil of moderate size: synechia posterior. Left eye: anterior chamber pretty clear: hypopyon yet remains; while a large clot of free lymph still projects from below the pupil, and, nearly covering that aperture, almost touches the posterior surface of the cornea; for the most part it is yellowish white, but at the upper extremity it becomes dark-brown: upper pupillary border of iris still thickened, reddish, and apparently overlaid with a film of fibrin; no vessels can be discerned on it: there is no tenderness of globe: the sight is quite gone.

Repetatur Pilula omni nocte; et pergat in usu misturæ.

10. Absorption of the effused matters progresses: hypopyon nearly gone: on inner side iris appears to be traversed by a mesh of red vessels; a single minute vessel is clearly perceptible, crossing its outer part: vision completely abolished, so that the patient can bear the sun's direct rays to fall on the left eye, without shrinking.

Dec. Sarzæ c̄ Pot. Iod. gr. iv. ter die.

P. Hydrag. Chl. C. gr. v. o. n.

Empl. Lyttæ pone aurem sinistram.

15. In the right eye, notwithstanding synechia posterior, and a greyish filmy false cataract, vision is sufficient for reading small print; in the left, very slight zonular vascularity remains. The greatest benefit has accrued from the exhibition of the iodide of potassium; for the immense mass of lymph, occupying, probably, a fifth of the anterior chamber on last report, has now been absorbed, leaving only a mem-

branous vestige on the capsule of the lens and in front of the nasal side of the iris, the colour of which, however, is perceptible through this veil. No vessels are now discoverable on the iris, the pristine hue of which is almost perfectly restored, all thickening and tuberculation of the membrane having disappeared: hypopyon is gone: but synechia posterior is complete: the lower segment of the substance of the cornea is dotted with minute blackish specks. The patient can, with this eye, tell light from darkness, but no more.

Subsequently to the last date, the vision of the right eye was rather deteriorated, as the adhesions to the capsule of the lens became more white and opaque: that of the left eye, however, meanwhile, continued to improve daily.

CASE 15.

WILLIAM H——, aged 29, admitted May 30, had syphilis a few months back: inflammation in the eyes is of seven days' duration. Right eye: active vascularity of conjunctiva and sclerotic: aqueous membrane very hazy, especially at lower half: pupil of medium size, and nearly, if not quite, immobile: nasal side of iris swollen and whitish. Left eye much in the same condition: the aqueous membrane hazy: iris more puffed and whitish; and, at one or two points, morbidly coloured: pupil irregular and fixed: much photophobia of both eyes, though the patient can only find his way about, and observe the most prominent objects. He was cupped yesterday.

Applic. Cuc. Cru. ad. $\frac{3}{4}$ xij.; et Extr. Bellad.

Cal. gr. ii. Opii gr. fs. 4tis horis.

31. Cal. gr. iii. Opii gr. i. 4tis horis.

Appl. Cuc. Cru. ad $\frac{3}{4}$ vi. sing. temp.

June 1. External vascularity is pallid: chemosis has arisen: anterior chamber is very dim: perception of light only remains: mouth very sore.

Cal. et Opii āā gr. i. nocte manequē

Applicetur Empl. Lyttæ amplum singulis temporibus.

3. Chemosis disappeared: aqueous membranes much clearer: margins of pupils, at several places, swollen, and overspread with a cloud of whitish effusion.

Pil. Hydrarg. Chl. Co. gr. v. o. n.

6. Right eye: anterior chamber quite clear: a little whitish semi-transparent lymph on iris, not extending much, if at all, into pupil; and through this film red vessels are discerned, as if on the iris immediately beneath. Left eye: anterior chamber clear: a large flake of white lymph extends from the iris to the capsule, projecting into the anterior chamber; at its base, at one spot, red vessels are seen ramifying upon the iris.

8. Great improvement: the fibrinous effusion has been absorbed in both eyes: in the right only is there now any semblance of morbid vascularity of iris: the adhesions, however, continue: mouth very sore.

17. Inflammation quite gone: pupils spacious, but partially adherent.

24. Pulv. Rhei. \bar{c} Sodæ Sesquicarb. \bar{c} Pulv. Calumbæ et Pot. Iod. ex Jul. Menthæ, ter die.

Pil. Hydrarg. Chl. Co. gr. v. o. n.

27. The irides are again swollen and reddened at the pupillary margins: the swelling now evidently is in the substance of the iris: sight worse.

Applic. Cuc. Cru. temp. ad $\bar{3}x$.

30. Swelling of irides has increased, so that a tubercle, reddened, but not distinctly vascular, is developed in each.

July 4. Mercury has been again administered to affect the mouth: patient continues his mixture. Right eye: tubercle not increased in size; seems to me vascular when viewed with lens. Left eye: circumscribed nebula of aqueous membrane: here, too, the tubercle appears vascular at its base, and its apex seems on the point of bursting and discharging pus. There is considerable intolerance of light, which prevents very minute observation.

Applic. Empl. Lyttæ pone aurem sinistram.

6. Photophobia diminished. There may now be distinctly traced, with the assistance of a good glass, in either eye, the rise of the surrounding surface of the iris to be continued upon the periphery of the tubercle; the thickness of the investment of the latter gradually diminishing towards its centre, where the aqueous membrane only is prolonged over it, and the ramifications of small blood-vessels are now

unequivocally evident upon each of these interstitial formations, which thence derive their reddish hue. That which threatened to suppurate is less prominent and distended; and the irides at other parts are regaining their brilliancy: the pupils, though adherent, are of good size: the sight is returning rapidly: full mercurial action is established.

8. Right eye: vessels still distinctly seen on tubercle. Left eye: tubercle sinking to level of surface of iris, and its vascularity no longer distinct.

Hydr. \bar{c} Cret. gr. i. Extr. Conii gr. iij. omni nocte.

Mist. Salin. \bar{c} . Sp. Æther. Nitrici, m xx. t. d.

Garg. Sodæ Chlorinatæ.

From this time the patient convalesced; the tubercular deposits were absorbed, and the irides regained the natural evenness and level of their surface. Iodine was again resorted to, with tonics, in a few days after the last report, and small doses of mercury were continued.

Synechia posterior remained in both eyes; but very good vision was nevertheless recovered.

CASE 16.

WILLIAM H——, aged 23, was in hospital June 28, 1844, with syphilitic iritis of the left eye, of nine days' standing, having, seven months before, had chancres, and still labouring under a syphilitic eruption and tender mouth, from the use of mercury: his irides were naturally of slate colour. The appearance of the eye was as follows: the conjunctiva and sclerotic around cornea injected: cornea clear: aqueous membrane nearly of normal transparency: iris slightly greenish over most part, but at inferior nasal side swollen in small tubercles, of which three existed side by side, studding the pupillary edge. These tubercles were of dusky reddish-brown hue, with whitish apices; and when inspected with a glass, their vascularity became evident, as also the rise in the adjacent surface of the iris to pass uninterruptedly over them. The vascularity was greatest at their base; the paler colour of their apex, arising apparently from the lymph effused in the substance of the iris, being here covered in merely by the aqueous membrane; in which, at that most projecting part, one or two minute vessels only were prolonged. The

sole morbid effusion visible on the free surface of the aqueous membrane was that which formed a bond of adhesion between the iris and capsule, at the superior and temporal side. The area of the pupil was dull, but of good size: vision, though misty, was sufficient to enable the patient to read large print; and he was free from pain and tenderness of the globe. He had been cupped on the 26th to six ounces, purged, and ordered to take a grain of calomel, with three of extract of conium, three times daily, and to apply belladonna.

July 1. Mouth quite sore: iris has, in great part, lost its reddish discolouration, and with it its apparent vascularity, one or two fine ramifications only being now perceptible: tumefaction of iris diminishing, and tubercles flattening down: sight much improved.

5. Plain surface of iris nearly, if not quite restored; its brilliancy still defective: no vascularity nor reddish tint now discoverable; the entire pupil is active and free, except at the site of the late tubercles: patient can read small print.

He quitted the hospital abruptly a day or two after the last report.

Before passing to any notice of the treatment of these cases, I would remark, that a venereal iritis, which bears almost every character of arthritic disease, and differs, therefore, widely from that just discussed, is occasionally met with: it is a consequence of gonorrhœa, and seems to be so mediately, *i. e.* as one of the rheumatic sequelæ of that disorder. In the train of syphilis, also, a similar form of inflammation sometimes arises, which may perhaps be correctly explained in the same way. Two examples of the gonorrhœal form are related below.

CASE 17.

SAMUEL R——, aged 25, was admitted June 4. He denied having had chancre, eruption, or any other venereal complaint than gonorrhœa, from which he suffered six months before application. Three months after that attack his throat became sore; but it was while under the full action of mercury exhibited for the cure of inflammation of the left eye, which got well under the treatment. He has been troubled,

likewise, with pains in his limbs, aggravated while in bed; but probably they were merely rheumatic.

Ten days previously to admission inflammation arose in his right eye, accompanied with pain in the globe, temple, and forehead, increased at night-time, vision being nearly lost.

Hydrarg. Chl. et Opii āā gr. i. ter die.

June 5. Hydrarg. Chl. gr. iij. Opii. gr. fs. 4tis horis.

Applic. Cuc. Cru. ad 3xii.

6. Mouth beginning to be sore: conjunctiva vascular: external surface and substance of cornea clear; its inner surface uniformly whitish and semi-opaque, so as nearly to conceal the iris and pupil: the patient can but just distinguish light from darkness: he is troubled with sickness.

Applic. Cuc. Cruentæ temp. ad 3xii.

Repet Pil. 4tis horis.

Mist. Efferv. 4tis horis.

8. Anterior chamber clearing: no material pain.

Capiat Mist. Cretæ; et repet. Pil.

Applic. Cuc. Cru. ad 3x.

14. Hydr. c̄ Creta, gr. i. o. n.

17. Anterior chamber quite clear; but the iris is of bright green hue (blue is its natural colour): a flake of lymph, which, four days ago, as the cloudiness of the aqueous membrane was dissipated, gradually came into view, floating loosely in the anterior chamber, is now absorbed: the iris is adherent at temporal side of pupil, and the capsule is dim.

24. Hydr. c̄ Cret. gr. iij. omni nocte.

July 11. Pot. Iodidi, gr. iij. ex Julep. Rhei Comp. ter die.

27. Inflammation gone. Iris continues of greenish hue and adherent; capsule of lens dim, from fibrinous deposit upon it: patient could see to read large print.

CASE 18.

Mr. F. E——, aged about thirty, subsequently to gonorrhœa, and having been in the interval troubled with rheumatic pains, but never before, was attacked, in May 1844, with inflammation of the left sclerotic and anterior chamber, in the course of which vision was temporarily lost. He was treated with mercury, to affect the mouth, and subsequently

with quinine, aided by the external application of belladonna, &c., and the integrity of the organ, both in function and aspect, was perfectly restored. He never, however, got rid of occasional rheumatic pains about the body and limbs; and under a mistaken idea of the best means of reinstating his general health, he observed a very restricted diet, abstaining from wine and beer, and indulging *ad libitum* in fruit and vegetables. Being naturally of a delicate frame and nervous temperament, he was, in consequence of this practice, in a condition much below par, when he became the subject of a fresh attack in the right eye, similar to the former, and applied to me July 10. He had then been suffering three or four days under inflammation, the pain accompanying which was occasionally severe, and attended with dimness of vision in the affected organ; he had taken a blue pill and black draught, and had his bowels well relieved thereby. Finding him, therefore, in so decided a state of debility, without fever, the conjunctiva and sclerotic inflamed, indeed, but far from acutely, though with considerable photophobia and lacrymation, the anterior chamber very slightly dull, and the pupil free and active, I ventured at once to prescribe

D. Cinch. \bar{c} Quin. disulph. gr. i., et Vin. Colch. ter die.

11. Patient not so well: general irritability, pain, and imperfection of vision greatly increased. In my absence from town, Mr. Dalrymple (whose courtesy I take this opportunity of acknowledging) was called in; and concurring in opinion of the desirableness of avoiding mercury in so irritable a constitution, prescribed saline purgatives for immediate use during the continuance of the febrile attack; and, on its subsidence, powdered bark with soda; or the *ol. terebinthinæ* for daily use.

12. Febrile action and pain allayed: loaded state of tongue relieved, but inflammation much higher than on my previous visit: aqueous membrane very dull, especially its corneal portion, on which there is an appearance of morbid deposit: pupil, as far as can be ascertained, free and mobile, but certainly indolent, and iris not thickened or altered in colour.

Vin. Colch. ʒfs. Tinct. Hyoscy. m xx. Magn. Sulph. ʒfs. Magn. Carb. gr. x. ter die.

P. Plummeri. Ext. Conii āā gr. iifs. nocte maneque.

Extr. Bellad. applic. circ. palp.

13. Doses of the magn. sulph., of vin. colch., and of conium increased.

16. Vascularity of superficial tunics still great: anterior chamber again clear, but apparently more distended with aqueous humour than in the state of health, the iris being pushed back, and presenting a concave surface: area of pupil spacious but dull, though free from perceptible morbid deposit: sight greatly improved: pain over side of head still distressing: bowels now open: sleep disturbed.

Pulv. Doveri gr. v. omni nocte; et repet. medic. omnia.

Applic. Hirud. v. temp.

Empl. Lyttæ pone aurem.

17. Pain of head much more severe; it seems, in great measure, independent of the ocular affection: sight rather more dim, and aqueous membrane perhaps more dull; but superficial vascularity is diminished: pupil very indolent.

Extr. Sarzæ gr. xxiv. Extr. Conii gr. viij. Potass. Iod. gr. iij. ex M. Camph. ter quotidie.

Pil. Hydrag. Chl. C. gr. v. nocte maneque.

Repet. Hirud. temp.

20. The day after the medicines last described were commenced, the opacity of the aqueous membrane was decidedly greater; now, however, the inflammation is controlled. External vascularity is still great, and has for some days exhibited the white ring external to the corneal margin deemed characteristic of arthritic disease; anterior chamber is perfectly clear, and iris brilliant: pupil spacious and black: pain is subdued, and scarcely perceptible: tenderness of globe has ceased: vision sufficient to distinguish the large letters on the title-page of a periodical: appetite and spirits, which were depressed, good.

22. Inflammation of conjunctiva subsiding: that of anterior chamber removed: vision is still improving, but exertion of the eye produces pain. The patient is steadily convalescing: he now takes a small portion of meat daily, and an increased dose of iodide of potassium and sarsaparilla.

31. There is still morbid injection of the palpebral conjunctiva, and of that immediately around the cornea; and vision, though sufficient for reading small print without pain, is yet impeded by hazy waving lines: with these exceptions, and but for rheumatic pains in his limbs and body, the patient is convalescent. He has continued the same medicines to the present time.

A few words upon the treatment adopted at this hospital may not be without their use, and will serve to display, in a fresh light, the differences between the two principal forms of iridal inflammation. A more or less antiphlogistic course is naturally suggested as the cure for so decidedly an inflammatory disease as syphilitic iritis: experience, however, proves that the more powerful antiphlogistic means—venesection—is but very sparingly demanded; so seldom, indeed, that I do not remember an instance of its being resorted to at Guy's for this complaint. Perhaps in country districts this mode of depletion may be found necessary in full plethoric habits. The same mould of constitutional frame may demand it in metropolitan practice; but I much question whether, at the present time, our rural and civic labouring population really require that difference in the rigour of remedial measures which was formerly inculcated.* I have, at least, no hesitation in deprecating that free resort to venesection, "whenever there is feverishness" (whether the pulse be full and strong, or no) which has been recommended in this disease;—first, as needless for its cure; but, above all, as tending to produce or aggravate that irritable cachectic state, to which the syphilitic subject is especially prone†. The sur-

* On occasional visits to a village in Norfolk, I have called, at the Clergyman's request, upon several of his sick parishioners, nearly all of whom laboured under disease of an asthenic type; and a shrewd but benevolent landholder in Sussex was recently remarking to me, how much more efficacious than medicine he found an order upon his larder and beer-cellar in removing the complaints of his tenantry. The agricultural poor may indeed, in the vigour of life, be exempt from the noxious air and confinement of town; but scant sustenance, severe toil, and mental depression from the gloomy prospect for old age, are theirs.

† Sydenham speaks in these strong terms of the use of blood-letting in lues:—"Haud dubie satius esse duxerit æquus rerum estimator nihil agere, quam its importune satagendo nocere."—*Epist. II. responsa.* § 25.

geon should always be cautious, in his treatment of even the most acute affections, not to exceed the bounds of necessary severity—

“*Injurioso ne pede prorsus
Stantem columnam.*”

Local depletion by cupping is, however, a remedy of the greatest service; it gives often immediate relief to the patient, at once mitigates his pain, and dissipates, in some degree, his obscurity of vision. Coupled with a brisk purgative, to clear the intestinal canal, it forms a nearly constant preliminary to the commencement of a mercurial course sufficiently decided to affect the mouth, or make the disease recede; and the practitioner may, of course, be well content if this latter should be even the only evidence of mercurial action upon the system. For mercury must not be administered in a set dose: it should in many cases be introduced into the system in the mildest form; while, on the other hand, in a more favourable constitution it may be exhibited with comparative freedom.

The cases are numerous, in which the patient may be advantageously supported under, and shielded as it were, in a measure, from, the injurious effects of the use of mercury, by the simultaneous employment of sarsaparilla, with or without the iodide of potassium—a combination no less valuable in this form of syphilitic disease, than in others where an irritable and vitiated constitution forbids the enforcement of so energetic a system of treatment as the local disease appears to demand. It is, in short, of infinite use when this malady arises in a cachectic individual; and it enables us then, if necessary, to diminish our dose of mercurial, and yet retain good hope of effectually reducing the disease, and discharging the patient with improved health and preserved sight. The mercurial may be advantageously given in form of pill with the extract of hyoscyamus, which possesses this claim of preference to opium—that, in place of favouring a disposition to contracted pupil, which is one of the ordinary comitants of the disease, it aids the belladonna externally applied in counteracting that morbid tendency. Chalk may, at the same time, be administered, to prevent any purging effect of

mercury, which hyoscyamus is not equally calculated with opium to restrain.

Conium, it is asserted, does not possess the power of causing dilatation of pupil in common with belladonna, hyoscyamus, stramonium, &c. ; yet, in one case of syphilitic iritis, in which the nurse had by mistake omitted the application of belladonna, I observed extreme dilatation follow its use in full doses combined with mercury ; and I could not satisfactorily account for this phenomenon, except by ascribing it to the action of the hemlock.

When the acuteness of the inflammation has been subdued, and the disease is quickly yielding, the dose of mercury at first requisite should be diminished. Small doses are, however, often needful for a long time after the disappearance of every external mark of inflammation, in order to remedy some slight visual defect—as a musca—which may continue to give annoyance to the patient. Its exhibition in this mild form is perfectly compatible with the administration of tonics and permission of a moderate diet, when deemed desirable.

Blisters become available as soon as ever further local depletion by cupping is judged unnecessary ; and inunction of blue and opium ointment to the temple and forehead, when pain about those regions is severe, very often produces the greatest relief.

The oil of turpentine is certainly capable of exercising a controlling power over syphilitic iritis, more especially, according to Mr. Carmichael, who first recommended it, when the aqueous membrane is chiefly, or, at least, largely involved ;—a set of cases, however, it must be recollected, which, in that very particular, depart from the normal type of the syphilitic disease. Case 3 at once exhibits the beneficial action of the medicine upon the local malady, and the difficulty of preventing its unpleasant, and, if continued, injurious effects upon the kidney, which would probably entail more serious mischief upon the constitution, especially if previously unhealthy, than the administration of mercury in full doses for three or four days, and its repetition, in alterative doses, combined with tonics subsequently. In one other case, where turpentine was employed under my observation

for this disease, it was likewise necessary to discontinue it, in consequence of the disturbance it excited in the system; Mr. Carmichael, however, succeeded in warding off these morbid effects, and deriving the expected advantages from it.

Differing in habit and character as syphilitic iritis does from arthritic, it is not surprising that they stand apart also as respects treatment. Less vigorous measures altogether are called for in the latter disease. Cupping is, indeed, generally necessary, but only to small extent. Mercury need not be given to affect the system; but as an alterative, or accompanied with saline purgatives and colchicum, to cause free action upon the bowels, it is, in the active stage, and to persons of moderate power, advantageous; while an early resort should be had to tonics with alkalies, the alterative dose of mercury being continued. Arthritic iritis is remarkable in its sensibility to the actions of belladonna and conium,—a peculiarity, I believe, first observed by Mr. Morgan. The application of the first is occasionally followed by so much suffering in the globe of the eye, mitigated on omitting, and renewed on reverting to the application, as to necessitate its discontinuance;—a circumstance before alluded to, and apparently depending upon the tension produced in the muscular fibres of the iris, which, in all probability, partake in some measure of the general rheumatic affection; for such effect of the use of belladonna appears to be confined to arthritic cases. Arthritic inflammation of the conjunctiva and cornea, as well as of the sclerotic, aqueous membrane, and iris, is sometimes remarkably under the influence of the extract of conium, given in doses of five or ten grains thrice daily, so that very serious inflammation of this kind will sometimes subside rapidly under its use; and it has therefore obtained with us a place among the remedies recognised as most eligible in this disease.

I have not selected the foregoing cases on account of their being particularly successful; and yet there will be found but three of the entire number in which sight was not restored; and of these, two, cases 13 and 14, came under treatment at too late a period to receive the full benefit of medicine (the former having been amaurotic three months before the syphilitic attack); and in the third, Case 4, loss of vision

was attributable to the wretched intemperance of the patient, who, with eye-sight—the most precious of bodily senses—in jeopardy, could not refrain from indulging his pernicious thirst for gin. There is probably no disease of so serious a character as this, more completely and unequivocally amenable to early well-directed remedial treatment: while the case just alluded to, and many which present themselves from time to time, at extensive ophthalmic institutions, in the last stage of disorganization, shew plainly how disastrous is sometimes its termination, when suffered to pursue its destructive course unchecked; and how uncontrollable is its mischievous progress, even under medical care, when exasperated by the licentious conduct of an infatuated patient.

ACCOUNT OF A SPECIMEN OF PARTIAL FRACTURE
OF THE
NECK OF THE THIGH BONE,
AND OF THE PROPER SOURCE OF NUTRITION OF THE HEAD
OF THE BONE.

(READ BEFORE THE ROYAL MEDICO-CHIRURGICAL SOCIETY,
MARCH 12th, 1844.)

BY T. WILKINSON KING.

THE following is one fact added to the scanty records which we possess of incomplete division through the neck of the femur; and I have added a description of the proper artery of the epiphysial bone forming the head of the femur, which seems hitherto to have escaped notice. Both these facts are of some little interest; but I do not deem them worthy of more than the passing attention of this Society. For this reason I have thought it desirable to make but few reflections.

Certain remarks which I have made elsewhere* on the subject of partial fractures, and on injuries to the cervix femoris, in some measure require such illustrations as the following, which also may not be found an inapt appendage to the more ample details of fracture of the neck of the femur, already published in the transactions of this Society.

Surgeons are aware that the inferior part or buttress of the cervix femoris, or that part between the head and the trochanter minor, is by far the most solid. All the superincumbent weight is directed on this part, and thus it would seem its comparative hypernutrition is excited or induced. It happens, however, that, with general senile atrophy and loss of elasticity and agility, this part is particularly prone to give way: the head of the bone sinks on the dense shell, and the inferior fragment is driven up into the cancelli of the head. At the same time, less violence is done to the thin

* See the article "Fracture" in the Cyclopaedia of Surgery.

elastic shell of the upper part of the neck of the femur, or that between the head and trochanter major. Possibly it is not a very rare event that in this way fracture extends through somewhat more than half of the neck. The following is about as nearly as possible a complete fracture :—

A patient of Mr. Bransby B. Cooper's, a man 72 years of age, survived an injury to his hip fifty-four days: he died of pneumonia. The neck of the left thigh bone was nearly divided by fracture at its narrowest part. All that seemed to retain the fragments in union was less than one-third of the shell superiorly and anteriorly. The head was deflected backwards, and the buttress of the neck, which was too thin, was driven into the cancelli about a third of an inch. The soft tissues were healthy. The only trace of new ossification is a point on the base of the buttress. There is no certain repair even of the bent portion of shell above.

Dr. Colles* describes three cases of partial fracture. He says of one, "The fracture was incomplete, for the external bony coating of the neck of the femur remained unbroken for nearly half the circumference of the bone at its posterior part." Of the second, he says, "Towards the posterior part of the neck the two pieces of bone remained connected with each other by a broad and thin band of the external coating of the neck, which was unbroken: this band was not less than an inch in breadth." His third case was equally well marked, and equally distinguished by want of bony repair. In the second case, the fractured surfaces were coated with solid ligamentous matter.

Considering the fact of partial fracture of the neck as sufficiently established, I wish to connect it with the peculiar mode of nutrition of the head of the femur. The artery which supplies the head of the femur, while it constitutes an epiphysis, is persistent through life. It is a large terminal branch of the internal circumflex artery, which enters a foramen a little behind and below the highest point of the neck of the femur. After this it curves over the denser layer of cancelli left by the union of the epiphysis to the shaft, directing its course beyond the insertion of the round ligament, to which, I doubt not, it furnishes nourishment.

* Dublin Hospital Reports.

Now it is remarkable that this vessel occupies the situation of the greatest immunity from violence; and that if only a little periosteum about it escape division when complete fracture occurs, it may be left entire to sustain that which I think could scarcely live without it. This consideration seems corroborated by all the examples I have examined of ligamentous union after fracture at this part. Whether there be a re-union by solid ligament, by a few scattered bands, or by a kind of capsule and cell (all rare events), I find the course of this vessel apparently uninterrupted.

It is needless to say that these observations apply to the doubtful cases of bony re-union of the cervix femoris. I would add, there may be more reasons against bony union at this part than have yet been considered. The fracture is often as much the result of atrophy as of violence, and we see that atrophy proceeds after the fracture: and it is very difficult, when a specimen is presented to us indicative of excessive and rapid wasting, to admit that an ossific re-union, so perfect as to be doubtful, has positively been in progress at the very same time; that is to say, may we not, in such a case, as well as in some others, suppose that complete fracture has not been produced?

I may also observe, that the position of the head, in a good variety of supposed specimens of fracture united, indicates the course of alteration I have pointed out: the pit of the head, instead of presenting upwards and inwards, faces inwards, or inwards and downwards; evidently shewing that the upper connections or relations of the head have been much less changed than the lower or inner. Not to detain the Society from more generally useful considerations, I conclude with what I conceive to have been essentially the opinion of Sir Astley Cooper—an opinion which I think the preceding facts, and a rich collection of specimens in the Museum at Guy's Hospital, strongly enforce. Nature can but feebly and rarely, and perhaps never, make any efficient effort to re-unite fractures which separate the head of the femur from its basis.

It is unnecessary for me to support the practical rule, that the patients' health and comfort are the chief desiderata, and not the repair of the fracture beyond what depends on the

formation of massive ligament around it. The general facts are all established, that the skeleton wastes with advancing years; that the cervix femoris is then prone to atrophy and deformity in an especial degree; and then, also, most liable to injuries; to suffer much from slight accidents; and to manifest little or no ossific reparation. It is equally certain, that the nearer the fracture is to the head, the less bony repair is to be expected, and *vice versa*. To these matters of fact I venture to attach the inference, that the possibility of more or less of the neck, or even of fibrous tissue including the artery of the epiphysis remaining unbroken, is a necessary consideration in the more difficult questions relating to the very common case of fractured cervix femoria.

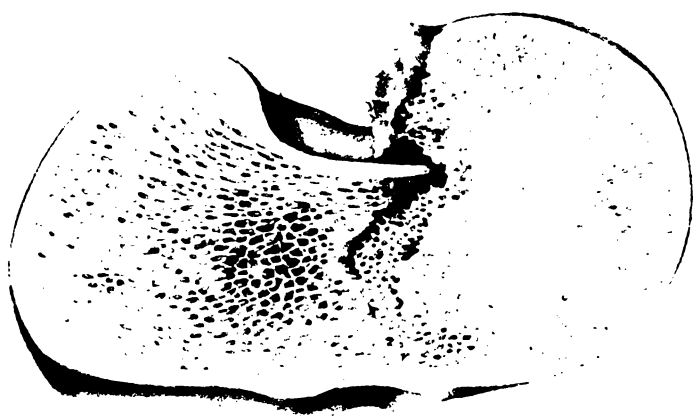
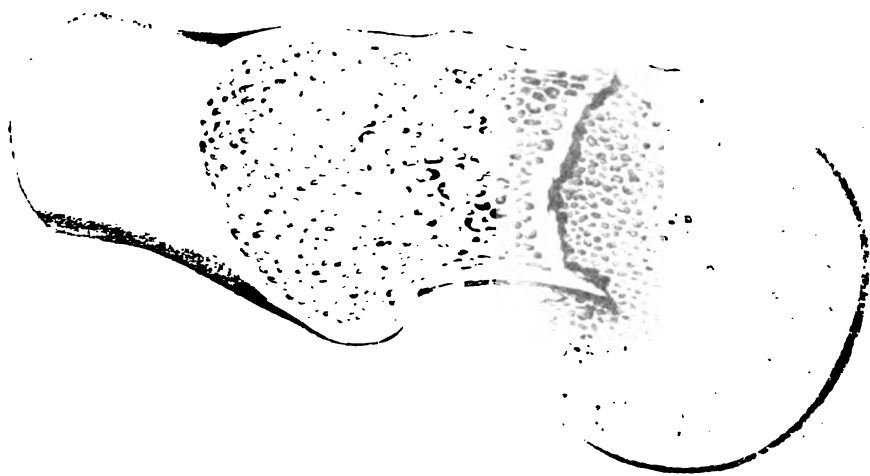
Note.—The artery of the head of the os humeri is very similar to that of the head of the femur. A branch of the anterior circumflex ascends along the outer side of the long tendon of the biceps, and finally enters a foramen in the anterior edge of the greater tubercle, forming the especial source of supply to the epiphysis; and it is quite sufficiently evident that a fracture may traverse the neck of the bone without destroying the continuity of the arterial channel.

The specimens illustrative of the foregoing statements will be found in the Anatomical and Pathological Divisions of the Museum.

DESCRIPTION OF THE ENGRAVING,
FROM THE SPECIMENS IN THE MUSEUM.

PLATE I.

Sections through the head, neck, and trochanter major, shewing the line of fracture, and the degree of displacement. In the upper view or section, the cervix is incompletely traversed by the fracture. In the lower, the line of disunion is complete.

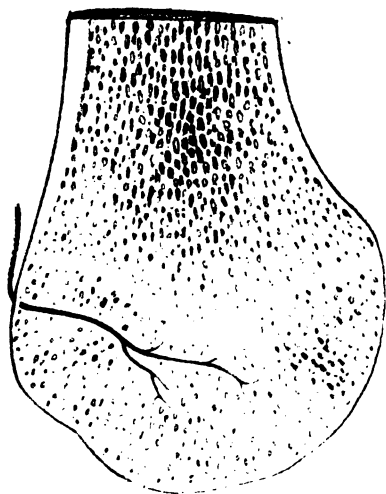


**DESCRIPTION OF THE ENGRAVING,
FROM THE SPECIMENS IN THE MUSEUM.**

PLATE II.

Fig. 1. The proper artery of the caput femoris.

Fig. 2. The proper artery of the head of the humerus.



ON

PARACENTESIS THORACIS.

ADDITIONAL CASES.

BY H. M. HUGHES, M.D.

(Continued from p. 104. No. III.)

CASE 12.

Chronic Pleuritic Effusion and Consolidated Lung—Paracentesis twice performed—Recovery (partial).

R. W—, aged 44, a thin spare man, of middle height and dark complexion, who got his living by vending fruit and fish in the streets, had been attacked with pain in the right side, together with some cough and dyspnoea, a month before he became an out-patient at the hospital, under my care, but up to that period had not applied for advice. At that time he appeared not to be suffering much; he had little cough; his tongue and skin were natural; his pulse were 100 in the minute, small and rather feeble; but he complained of pain in the side, and shortness of breath, and the entire right side was found to be perfectly dull and resistant upon percussion, and to be almost destitute of pure respiratory murmur. He was ordered to apply blisters, and to take mercurials and diuretics; but as he got no better, he was admitted into the hospital under Dr. Babington, but soon fell under my care. The right side was not then enlarged, but was scarcely at all raised upon inspiration. He could lie in any position in bed without inconvenience; he had dyspnoea only upon exertion; his appetite was good; his tongue, skin, and excretions natural, though his pulse was still frequent, small, and feeble. The physical signs were, entire dullness on percussion throughout the right side, but not extending under the sternum; almost perfect immobility upon inspiration; the respiration distant and tubular; absence of vibration felt by the hand; the voice shrill below the angle of the scapula, defective in other parts; no enlarge-

ment of the side, or intercostal protrusion; the liver not felt below the ribs, and no displacement of the heart; the signs of the left side normal. The explorator having been previously introduced, and the presence of a considerable quantity of clear fluid having been certified, the mouth having been slightly but decidedly affected by the mercury, and the repeated application of blisters, together with the administration of diuretics and hydrogogue cathartics, having been persisted in for several weeks, without any decrease of the symptoms or physical signs, a small trochar was introduced by Mr. Cock, on July 7th, and thirty ounces of perfectly clear straw-coloured fluid withdrawn. The fluid did not coagulate spontaneously after resting for twenty-four hours, but became solid upon the application of heat. He was in no respect inconvenienced by the operation; and though ordered to keep his bed, he evidently thought the precaution unnecessary, and was walking about the next day.

July 15th. The operation was repeated, and twelve ounces of similar fluid removed. It flowed less freely than before; and a probe introduced through the canula, at a very short distance within the pleura, came into contact with a firm resistant body, which was not discovered after the preliminary exploration or the former operation. He was as little inconvenienced as before, and only appeared disconcerted by the order that he should again keep his bed for twenty-four hours. The medicines were now increased: the liq. potass., which he had previously taken in doses of $m\ x.$, being given to the amount of $m\ xxx.$, and the potassii iodidi being augmented from $gr. \text{ij.}$ to $gr. \text{iv.}$ The only obvious effect of either operation was, according to his own statement, to render the breathing less difficult; but as the number of respirations had unfortunately not been previously counted, this improvement could not be certified by his physician. The chest, however, measured more than an inch less in circumference than before the operations. He was afterwards again put under the influence of mercury; and being now free from any cough or disturbance of the respiration; being able to lie down with ease; to walk about without inconvenience; to eat, drink, and sleep well; and his principal complaints being of flatulence and palpitation, probably resulting from dyspepsia; the

respiration having returned in a great degree in even the lower part of the right side posteriorly, and to some, though a less extent and degree anteriorly, though the whole side was still very dull on percussion, and the voice shrill throughout its greater portion; he left the hospital August 13th, with the belief that he would be improved by air and exercise, and with the promise that he should return if he were not so well. Up to the present date, September 13, he has not since been seen or heard of.

CASE 13.

*Empyema—Phthisis?—Paracentesis thrice performed—
Recovery progressive.*

H. W.—, aged 34, admitted into the hospital, under the care of Dr. Addison, June 25, 1844. He is a thin but tall man, of dark complexion; a medical practitioner by profession, and formerly a pupil at Guy's. His family are all healthy, and he had himself enjoyed good health previously to the illness, of which the following history, with some slight omissions and alterations, was written out by himself. He first felt unwell in November 1842, while residing in Port Philip, New South Wales, from hoarseness and uneasiness about the throat, with some cough, which increased gradually, and, about the time of rising in the morning, was accompanied with the expectoration of viscid mucus. The cough soon increased, and recurred at intervals of half-an-hour. He became debilitated, pale, and emaciated, and had an anxious expression of countenance, with loss of appetite and dyspnoea. In this state he continued, without the employment of any remedial measures, till the 14th of February 1843; when, while he was coughing violently during the night, his mouth filled with blood, of which he expectorated several mouthfuls, but afterwards slept pretty well till morning. On the 15th, as the hæmoptysis continued, he was bled to sixteen or twenty ounces, and took the ordinary remedies, without benefit. After some days the hæmorrhage was stopped by half-drachm doses of ergot of rye, taken every four hours, by which the pulse were reduced from 96 or 100 to 60 or 50, and, on one occasion, to 48, and of the administration of which, constipation and diminution of the quantity of urine also appeared to be

the consequences. After three weeks he got out, went into the country, and lived well, without stimulus, which always increased his cough: still he got weaker and thinner. In the following July he sailed for England. After the exertion of attending an accouchement during the night of August 8, he felt somewhat exhausted, brought up a little more blood by coughing, and suffered from an increase of a pain in the right side, passing from the nipple through to the shoulder, which had existed more or less from the preceding January. In the month of September he could not take a deep breath without pain, and was unable to lie on the right side. He was now cupped, with great relief, but suffered from rigors, followed by heat and perspiration during the evening, pain in the region of the liver, some twitchings about the abdominal ring, passing down the thigh, occasional pain about the left nipple, debility and emaciation. The excretions at this time were dark and offensive, and sometimes black; the appetite bad; and the pulse rapid. In October the vessel put into Bahia, South America, when he took ten grains of calomel, followed by a purgative three or four times a week, by which the excretions became natural, and the abdomen free from uneasiness. He arrived in England in the end of November, when the right side of the chest was found to measure an inch more than the left.

He consulted a physician, who told him the right lung was consolidated; that disease existed in the left; and advised nitric acid and a bitter infusion to be taken internally, and tincture of iodine to be externally applied. He now went into the country, took a good deal of exercise, and lived well; occasionally applied leeches and blisters to the painful parts of both sides of the chest; breathed through a tube with the hope of expanding the lungs; had some slight attacks of rheumatic gout; but got worse and worse, till, by the advice of Dr. Addison, with a view to the operation if it should be deemed necessary, he was admitted into the hospital, on the day previously mentioned. He was then much debilitated. He had a pulse of 120, considerable dyspnoea, and an entire incapability of lying on the left side, or on the back. He had very little cough, accompanied with trifling mucous expectoration, a clean tongue, a good appetite, and was free from

nocturnal perspirations. The right side of the chest was then very dull on percussion both behind and before, including the entire length and breadth of the sternum: it was somewhat misshapen, and measured about half an inch more than the left side. Tubular breathing was heard throughout the whole of the right side, excepting immediately below the clavicle and about the spine of the scapula, where some harsh respiration, together with fine but loose mucous rattle, was indistinctly audible. The voice was tolerably resonant over the whole of this side of the chest, and possessed a shrill ægophonic character below the angle of the scapula. The impulse of the heart was felt more than an inch nearer to the axilla than in the healthy state. *The liver could not be felt below the ribs, nor was any sulcus apparent, though both were sought after with some interest.* There existed no general elevation or bulging of the intercostal spaces; but a soft, flat, fluctuating tumor, nearly the size of the palm of the hand, which increased upon coughing, was observed to overlies, and to proceed from between, the sixth and seventh ribs.

On the left side, dullness on percussion, increased resonance of the voice, and imperfect respiratory murmur, existed in the mammary and hypochondriac regions; and just above and to the outer side of the nipple, over a space the size of a crown-piece, increased dullness on percussion, tubular breathing, imperfect pectoriloquism, and gurgling rattle, were clearly distinguished. The other parts of the left side presented nothing abnormal; and the heart, with the exception of its being displaced, appeared healthy. After many consultations, and repeated examinations, it was resolved that the left pleura should be explored by the needle and canula. The presence of an abundance of fluid having been thereby ascertained, the trochar was introduced by Mr. Cock between the seventh and eighth ribs, and twenty-four ounces of turbid yellow fluid withdrawn in a full stream, and without the slightest inconvenience, on the 27th of June. The same afternoon, without the sanction of his medical attendants, he was walking in the square of the hospital; and, perhaps in consequence of this imprudence, he was affected with increased cough, together with slight hæmoptysis, during the following night. He was consequently desired to keep his bed,

to preserve silence, and to take ext. conii, gr. iv. and plumbi acetatis gr. i. ter die. As the conium affected his head, it was afterwards changed for hyoscyamus; and at the same time an ammoniacal mercurial plaster was applied to the side.

On July 3d, the hæmoptysis and increased cough had entirely ceased, and he was in every respect better than before the operation. He was now advised to take three grains of iodide of potassium in compound decoction of sarsaparilla, together with a pill containing a grain of squill and four grains of extract of hyoscyamus three times a day, and to leave the hospital for the benefit of a purer air.

July 15th he was re-admitted under my care. His health had considerably improved; but the right side of the chest was much as before, excepting that the soft flat tumor, which increased upon coughing, had almost perfectly disappeared; that the sternum was now resonant on percussion; and that the dullness of the infra clavicular region had decreased. The dullness and defective respiration of the lower part of the left side had disappeared; and the signs afforded by the defined space above the left nipple had greatly diminished in their intensity.

July 16th paracentesis was again performed by Mr. Cock, in nearly the same spot as before, and thirty-six ounces of similar fluid withdrawn in a full stream, without any difficulty, and with great relief to the breathing. After the lint and plaster, a flannel bandage was applied tolerably firmly round the chest: he was enjoined to keep quiet in bed, and not to talk. He passed a comfortable night, had no increase of cough, and no hæmoptysis. The next day he got up and employed himself in writing, experiencing not the slightest inconvenience, but, on the contrary, feeling much relief from the operation. He was ordered,

Pil Hydrarg. Ext. Hyoscyam. āā gr. iifs. ft. pil. nocte maneq̃ sum.
Liq. Potass. m xx. Inf. Aurant. ʒ iſa. ter die sumend.

A pint of porter daily, and to have a good, nutritious, but unstimulating diet.

With these directions, after a few days residence, and the removal of the bandage, he, by my advice, again left the hospital for some time.

He was re-admitted under my care July 30th. A very

gratifying change was now apparent. The girth of the chest measured at least two inches less than formerly, the decrease being nearly equally divided between the two sides. He could lie and sleep, without difficulty, on the back and left side; his health had much improved; his tongue was clean; and his breathing comparatively easy. The entire sternum remained resonant upon percussion; and the upper part of the right side, nearly as low as the nipple, had regained its sonorousness. The vesicular murmur was audible in the right side posteriorly, and, though mixed with mucous rattle, and harsh in character, as low as the nipple anteriorly. The right side expanded, upon inspiration, nearly as fully as the left; the dullness, gurgling, and resonance of the voice above the left nipple had almost entirely disappeared, the particular space being indicated principally by a little mucocrepitating rattle; and the impulse of the heart was felt in nearly its normal site. But increased resonance of the voice was still observed below the right clavicle; and though the soft tumor over the inferior ribs had disappeared, dullness on percussion, and distance of the respiratory murmur, existed in the lower and anterior part of the right side. After consultation, the trochar was again introduced by Mr. Cock, and twelve ounces of fluid withdrawn, similar in character to that previously evacuated. It now flowed, however, we were pleased to find, much less freely than before; but no air was allowed to enter the pleura. A flannel bandage was applied; and after remaining in the hospital for a few days, without any increase of cough, he again left, to go into the country for two or three weeks, hydrarg. c̄ creta having been substituted for pil. hydrarg., which he fancied disagreed with his bowels.

Aug. 23d he again returned to the hospital. He had gone on with the mercurial so as gently to affect the mouth, and then discontinued it. His aspect was now healthy; his cough was trifling, and only occurred upon talking or taking a deep inspiration; he was able to walk for several miles without distress; he was able, also, to lie down without difficulty; he had no expectoration and no dyspnoea, his respiration being 22 in the minute while at rest, and his pulse 96; the tongue was clean, and the appetite good. The right side was raised nearly equally well with the left. The resonance on percus-

sion and the vesicular murmur were almost natural as low as the nipple; but below this anteriorly, and the angle of the scapula posteriorly, in which latter situation some pleuritic rubbing could be distinguished, dullness on percussion, and distance of the respiration, still existed. The girth of the chest had not increased since the last admeasurement. As, therefore, there appeared no evidence of the re-accumulation of the fluid, and as he was advancing in every respect satisfactorily, it was not thought necessary to order him again to be tapped. He was recommended to apply repeated blisters to the side, so as to keep up a constant discharge, and to take potassii iodidi, gr. ij. forma pil. c̄ ext. sarzæ, ʒfs. liq. potass. m x. decoct. cinchon. ʒi. bis die.

With this advice he again left the hospital Aug. 28th; and having presented himself, merely for the purpose of examination, on Sept. 3d, permanently quitted it, with the purpose of obtaining some professional occupation.

CASE 14.

Chronic Pleuritic Effusion—Paracentesis—Recovery.

S. T——, aged 18, admitted into the hospital under my care, July 31st, 1844. He is a rather tall and thin lad, with pale, freckled face, and sandy hair, of scrofulous aspect, residing at Brixton as an apprentice to a house-painter. His father and mother are alive, and his brothers and sisters, of whom he has several, are healthy. Eight months ago he first felt pain in the chest; but after a week's holiday was able to return to his employment. The pain returned at Christmas, but detained him at home only a few days. In March last he was, however, again compelled to desist from work, in consequence of weakness and pain of the stomach and right side, for which he took some medicine, and applied a blister. A month after, that is, four months previously to his admission, he was attacked with pain in the left side, for which leeches were applied, and medicines administered, without benefit. He never suffered from hæmoptysis, and has had little or no cough during any portion of his illness. Upon admission, the face was pale and thin, and the expression rather anxious; the skin soft and perspirable; the tongue clean and moist, and the appetite good; the bowels irregular in their action;

the respirations 42 in the minute; and the pulse 120, and very feeble. The physical signs presented, on examining the chest, were, dullness on percussion as high as the fourth rib on the left and the sixth rib on the right side anteriorly, and at the angle of the scapula on the left side posteriorly. The respiratory murmur was defective, or distant on both sides at the lower, and puerile on both at the upper parts of the chest. Increased resonance of the voice existed over the whole chest, except at the inferior part of the left side before and behind. A little pleuritic rubbing or creaking was heard, together with shrill bronchophony, along the outer edge of the lower part of the scapula. The apex of the heart was felt most distinctly to strike the parietes between the fourth and fifth ribs, below and rather to the inner side of the nipple: its impulse was feeble; its sounds were triple. There appeared, indeed, to be a double first sound. The rhythm may be thus represented—tic tic—tac; tic-tic—tac. Its abnormal character seemed to be probably connected with effusion between the pleura and pericardium. He lay most comfortably upon the left side, which measured barely one-third of an inch more than the right, and the ribs of which were fairly, though imperfectly, raised upon inspiration. As he was exceedingly feeble, and slept badly at night, he was at first ordered,

Opii gr. fs. quaque nocte; and Sulphat. Quinin. gr. iij. ex. Inf. Rosæ. C. ter die.

August 1. The explorator was, by my desire, introduced by Mr. Cock between the ninth and tenth ribs. A few drachms of clear fluid escaped, in which a slight cloud appeared upon standing twenty-four hours; but as the stream was not full, and as it appeared probable that air might enter the pleura, the trochar was not now employed. On the 2d he was ordered to continue his pill, and to take, three times a day, potassii iodidi gr. ij. liq. potass. m xx. and decoct. cinchon. ʒi; and on the 8th, as his health appeared already considerably improved, to continue the mixture, and, together with his night pills, to take pil. hydrarg. gr. vi.

14th. He complained rather more of the dyspnœa. The other symptoms, with the exception of his improved appearance, and the physical signs, presented little variation. It

was resolved, therefore, to draw off some of the fluid. Mr. Cock introduced the trochar at the part formerly explored; and, the exit of the liquid effused being assisted by the inclination of the body, seventeen ounces and a half of clear serum, of the specific gravity of 1022, were evacuated in a full stream, and without the admission of a bubble of air. A flannel bandage was applied, and he was desired to keep quiet. He slept well the succeeding night, had no cough, and the next morning appeared more cheerful and less distressed than I had ever seen him; indeed, to use his own words, he "was only tired of lying in bed." He was now allowed to get up, and was ordered to continue his medicines.

20th. The bandage was removed. The puncture had perfectly cicatrized. He complained of a "grating feeling" in his left side; and, indeed, a harsh pleuritic creak was heard over the whole of the inferior portion of this side both behind and before, together with a rubbing sound (*frottement*) during certain states of the inspiration, with both the systole and diastole of the heart. The chest measured one and a half inch less than before, almost the whole of which was dependent on the decrease of the left side. He now lay upon the right or left side with equal facility; had no cough; and had much improved both in flesh and appearance since his admission. His respirations were 36 in the minute, and his pulse 112, but still very feeble. This day, Sept. 7th, he has been again examined. He makes no complaint, excepting of the soreness of a blister recently applied: the tongue is clean, the respirations 22 in the minute, but the pulse still numbers 112 to 120, and is very feeble. The left side is throughout resonant upon percussion, and the respiratory murmur can be heard in every part, the only abnormal circumstance discovered being a little pleuritic creaking, resulting from adhesions. The treble beat of the heart, also, has disappeared. As he seems now to be suffering more from debility and confinement than from any remains of his complaint, he has been advised to go into the country for change of air, on Monday next, the 9th instant, with a desire that he shall present himself for examination upon his return to the neighbourhood of town.

Of the cases reported in the former Paper, whose cure was not then complete, and the "ultimate result" of the operation in whom was consequently noted as "Partial Recovery," it may be interesting to observe, that,

No. 1, J.P.—, is still in the hospital, and that his general health is excellent; that for the last six or eight months he has had no complaint of the chest; that the left side is considerably contracted and misshapen, from the absence of the fluid formerly effused, and consequent adhesions between the pleuræ; but that he still suffers from ascites, caused by obvious enlargement of the liver; and that since the last report the operation of *paracentesis abdominis* has been performed eight times, making, in the whole, eleven times, in addition to the four occasions on which the operation was performed on the chest.

No. 5, M. S—. Of this woman I have seen nothing, and nothing has been heard, excepting that some months after she left the hospital she was met by the sister of the Ward upon London Bridge, carrying a large bundle, when she said she had no complaint excepting a little shortness of breath; and that Dr. Lever was once called to see her in connection with her expected accouchement. I have unfortunately been unable to obtain her address, either from Dr. Lever or from any other person. I regret that I can, therefore, make no report upon her actual condition at the present time.

No. 20, M. B—. After losing all the symptoms and all the physical signs, excepting partial dulness on percussion posteriorly, which I have uniformly found to linger the longest in the progress of cure of empyema or pleuritic effusion, he remained in the hospital several weeks, in consequence of occasional attacks of pneumonia and bronchitis connected with tubercles; and at length left, by his own wish, for the benefit of fresh air.

The three cases herein related, together with two others which I unfortunately forgot on the former occasion, and which I saw seven years ago in consultation with Mr. W. H. Smith of Walworth, a gentleman who was at that time my colleague, and is still Surgeon to the South-London Dispensary, I arrange so as to form a continuation of the Table formerly published.

No.	Initials.	Age.	Disease.	Physician.	Operator.	Immediate Effects.	Ultimate Results.	Accompanying Diseases.	Additional Remarks.
21.	M. A. S.	7	Emphysema	Dr. Hughes	Mr. W. H. Smith	Great Relief	Recovery	None mentioned	Recovery complete. A soft fluctuating tumor had already appeared between the ribs.
22.	T. R.	19	Emphysema	Dr. Hughes	Mr. W. H. Smith	Great Relief	Partial Recovery	None mentioned	A soft fluctuating tumor had already appeared between the ribs. Paracentesis twice performed. After the second operation a fistulous opening remained: after a period of 7 years it still exists.
23.	R. W.	44	Pleuritic Effusion	Dr. Hughes	Mr. Cock	Relief	Recovery	Consolidated lung	Paracentesis twice performed. Consolidation of the lung from some cause remaining behind.
24.	H. W.	34	Emphysema	Dr. Addison and Dr. Hughes	Mr. Cock	Relief	Recovery progressive	Consolidated lung of the other side. Phthisis?	Paracentesis three times performed, with obvious improvement. Cure not yet perfectly complete.
25.	S. Y.	18	Pleuritic Effusion.	Dr. Hughes	Mr. Cock	Relief	Recovery	None observed	No obvious disease remaining, though general health delicate. Adherent pericardium probable.

Of these twenty-five cases, in which paracentesis thoracis was once or several times performed, thirteen may be fairly stated to have recovered, so far as regards the effusion into the pleural cavity. Two may be justly mentioned as having at least partially recovered. One of these has, after seven years, a fistulous opening into the pleura; and the other has still some, though comparatively a very small quantity of fluid in the right pleura; but feels so much better as to be actually in search of employment in his profession. Ten have *ultimately* died of other diseases, generally connected with that for which the operation was performed, but entirely independent of its performance. Of these ten cases ultimately fatal, six have died of phthisis; one of gangrenous pulmonary abscess of the opposite side; one, after three months, of chronic pneumonia; one rather suddenly with hydrothorax in the other pleura; and one, a case of pneumothorax with effusion (in which the operation was performed simply with the hope of affording temporary relief), of pneumonia and pericarditis.

SELECT CLINICAL REPORTS.

WITH OBSERVATIONS

BY GEORGE H. BARLOW, M.A., & M.D.

IN the course of the present work allusion has been made to the Clinical Establishment of Guy's Hospital, in reference both to the system of observation and instruction in the general wards, and to the plan pursued in those which are more emphatically designated "the Clinical," as being expressly devoted to the purposes of bed-side instruction and observation.* It is to the latter that I now wish to direct attention; my design being to give an account of cases which have occurred in these wards in the course of the eight weeks of the last session during which I had the charge of them;—a course which I am induced to follow, not only on account of the intrinsic interest of many of them; but also because the bringing together a number of cases, selected often as much on account of their dissimilarity as their resemblance, although a departure from the ordinary plan of the papers hitherto published in this Journal, may not be altogether without its advantages.

No one, I am aware, who is not wholly unacquainted with the progress of Medical Science during the last half century, needs to be told of the light which has been thrown upon various subjects by the many valuable monographs with which our literature has been enriched in the course of that period: at the same time it should not be forgotten, that contrast is often as instructive as comparison;—that no induction of facts is complete which does not embrace the one as well as the other;—and that in the investigation of disease, although we may be enabled, by the comparison of a number of similar cases, to eliminate and set aside those circumstances or symptoms which are merely adventitious,

* Guy's Hospital Reports, Vol. II. p. iii. et seq. and New Series, Vol. I. p. iv. et seq.

and determine and retain those which are essential; still it will sometimes happen, when a number of cases are brought under review, irrespectively of any nosological or pathological arrangement, that amongst several, which appear to differ widely in all other respects, a single circumstance or condition will be found to prevail, the contemplation of which one point of resemblance may probably suggest some new generalization, or elicit some principle of extensive application, either in diagnosis or practice.

The same remarks appear to me to apply with as great, or even greater force to the selection of cases for the purpose of Clinical instruction. And it is, perhaps, in this respect that the plan generally adopted in the Clinical Lectures at Guy's Hospital differs from that pursued at some other institutions, at least if we may judge from the "Clinical Lectures" upon this or that disease, with which the medical periodicals abound, and which appear to be too often a repetition of a portion of a systematic course, illustrated by a case; whilst amongst us, these lectures being of a more colloquial character, and designed, not for publication, but for the instruction of those to whom they are more directly addressed, the object aimed at is, not so much the delivering a formal discourse upon any particular disease, as the recalling to the memory of the student the most instructive facts which have been noticed in the wards since the preceding lecture,—the impressing upon his mind the most important practical inferences to be drawn from them,—and the directing his attention to those circumstances which it may seem most desirable that he should observe in the future progress of any particular case.

In order to make myself more clearly understood, I subjoin a description of our Clinical Wards, with a diagram shewing the nature of the cases occupying them upon a given day. (See Plate I.)

These wards consist of a male and female ward; the former containing twenty-four, and the latter, eighteen beds. Between them is a spacious room for the meeting of the physicians and pupils, and the registry of the cases. The books in which the records are kept are not allowed to be removed from this room, except by the clinical physician

for the preparation of his Lecture, so that they are at all times accessible to such of the pupils attending the wards as may be anxious to consult them. These records are made by the clinical clerks, of whom there are generally four, who are selected from the more-advanced pupils, and who have distinguished themselves by their ability and diligence in reporting in the general wards. Upon the admission of each patient, a careful report is made by the clerk who has the care of the case, of his previous state of health and habits of life, as far as they can be ascertained; of the origin of his present illness; and of his symptoms at the time of his admission: and the same clerk also makes a daily report of the case whilst the patient remains under treatment. These reports are read at or near the bed-side of the patient at the daily visits of the clinical physician, and form the subject of conversation between the physician and the pupils in the room in which they assemble before and after visiting the patients; and also of a more formal lecture, delivered weekly, in which the grounds of diagnosis and prognosis, the principles upon which the plan of treatment has been formed, and the effects of the remedies which have been used, are treated of more in detail.

Now, upon a reference to the list of cases which illustrate the diagram of the wards*, it must, I think, be apparent to every one, that to treat fully, in a single lecture, of one or two of the diseases named in that list, would leave no time for allusion to many other cases, presenting daily changes in their progress, to which it must be highly desirable to direct the attention of the Student; and the effect of which upon his mind would be greatly impaired were the mention of them omitted until the disease in question might become the subject of a special lecture. The latter method would be the more eligible, were our pupils the mere passive recipients of the instruction we would impart: but the great object of clinical teaching should be, to instigate, to direct, and to aid the student in the active acquisition of knowledge for himself.

My friend Mr. Brereton having expressed a willingness to

* Plate I.

draw up an account of the cases which occurred in the Clinical Wards during the last session, I have committed to him the greater number of mine, to be included in his report with those occurring under the care of my colleagues. I have thus departed from my original intention only in the letter, as the principle will be carried out upon a larger scale by a gentleman of great experience in clinical research. At the same time, I have reserved some of my own cases for publication by myself, as they appear to me to throw some light upon certain obscure questions, both in diagnosis and practice. The three following cases may perhaps assist in removing some of the difficulties which beset the subject of

CONSTIPATION.

No considerate practitioner can, I think, enter upon the treatment of a case of this affection, without asking himself the questions, Where is the seat of the obstruction? and, What are its nature and its cause?—questions, however, to which it may not always be easy to find an answer: and, accordingly, most systematic writers divide constipation into several species, agreeably to the distinctions implied in these queries. And yet I cannot find that the symptoms have been so thoroughly analysed by any, as to enable us to say which are referrible to constipation, in its most comprehensive meaning—to the simple fact, in short, of the non-evacuation of the bowels,—and which to the particular seat and nature of the lesion upon which it depends. Take, for instance, a work of deservedly very high authority (Dr. Copland's Dictionary), and there we find, that, although all the causes are carefully stated, yet no attempt is made to give any definite rules for determining which of these causes exists in any particular case. Again, "nausea," "vomiting," "pain," "tenderness and tumefaction of the abdomen," as well as "high-coloured urine," are spoken of as belonging to constipation in general, and as affording grounds for the greatest alarm as to the issue of such cases; and most justly so: but it is equally true that these symptoms not only do not present themselves in all cases, but also that there are some in which one or more is necessarily absent. Thus I think it will appear, that, in

some—and those, too, almost certainly-fatal cases—vomiting may be absent almost, if not entirely, till the very termination; that in others the urine is abundant and clear throughout; and in others—and those perhaps the worst cases of any—there can be, from the very nature of the case, no abdominal tumefaction whatever. This apparent defect is to be ascribed to no lack of care or observation, but to the intricacy of the subject. The fact is, that the diagnosis is a most difficult one, and one, also, in which more extended experience and observation seems to discover fresh sources of fallacy. Thus an instance was a short time ago mentioned to me by my friend Dr. Munk, in which there existed great doubts in the minds of several practitioners of great experience as to whether a case was one of obstructed bowel or of ischuria renalis: and that such a difficulty may arise, will, I think, appear from one of the following cases.

CASE I.

Constipation—Distended Abdomen—Abundant Urine—Very little sickness.

(Reported by MR. KERSHAW.)

JOHN J——, aged 26, was admitted into Job Ward, on the 8th of March 1844. He was by trade a cabinet-maker; temperate, and generally healthy, and had lived mostly in London, and never been in any hot climate, or affected with diarrhoea or dysentery. Twelve years before his admission he had an attack of constipation, which yielded, in a few days, to common purgatives. About eleven years after that he had another attack, which lasted for six days, and was removed by the introduction of a long tube into the bowel, which gave vent to a large quantity of flatus. Since that time his health had been good. Eight days before his admission he had an evacuation; and from that time his bowels were constipated. Five days afterwards he began to feel a screwing pain in the epigastrium, which, with the exception of periods of remission, continued till his admission.

At that time his countenance was anxious, but not flushed: tongue moist, and a little loaded: pulse small, not hard, 85: abdomen *much distended with flatus*, and the track of the colon particularly resonant upon percussion. *He had no sickness: passed his water easily, and in good quantity:* he expelled a little flatus now and then. Five grains of calomel, with a grain of opium, were given immediately, and half an ounce of castor-oil two hours afterwards. He was also placed

in a warm-bath, which relieved the pain ; but it afterwards returned at intervals, obliging him to sit up in bed. An assafoetida enema was also administered at bed-time, which returned, bringing away a very slight quantity of faecal matter. On the following day (the 9th), his condition being much the same, and there having been no tenderness of the abdomen, he was again placed in the bath, and whilst there a flexible œsophagus-tube was passed up the bowel to the extent of eighteen inches: it passed through some firm faecal matter, and gave exit to a little air, but caused no action of the bowels. He was afterwards ordered four grains of comp. extr. of colocynth, with one of extr. of hyoscyamus every hour; and on the 10th, no relief having been procured by six grains of calomel with one of opium, the long tube was again introduced, to the length of twenty-three inches, and a quart of warm water was injected. A little air passed out, and the water, partly drawn and partly flowing through the tube, returned tinged with faecal matter. Five grains of potassio-tart. of antimony, in three ounces of water, were then injected into the rectum.* On the 11th, being in much the same state as on the previous day, the pain in the abdomen recurring in paroxysms, he was again placed in a warm-bath, which gave temporary relief: warm water was copiously injected from the bath, and drawn back again, scarcely tinged. No flatus was passed on this occasion. Twelve grains of calomel were then given, followed, in a hour, by half an ounce of castor-oil, which was repeated after three hours. At eight P.M. the distention continued, the pain increased, the countenance was more anxious, and the pulse was now, for the first time, full and quick, and the tongue furred: the tube was again passed to its full length of twenty-three inches, and gave exit to a large quantity of flatus; and after that, by the aid of warm water, a good deal of green faecal matter was drawn off through the tube; after which the abdomen became soft, the skin moist, and the patient seemed disposed to sleep.

A considerable re-accumulation of air, however, had taken place at nine o'clock on the following morning, and no evacuation had been procured by the man's unaided efforts.

The following pills were ordered on that day (the 12th):

Aloë's Barbudens. gr. xxxvi. Acid. Sulph. F. m ix. Divid. in pil. ix., quarum sumat iij. tertiâ quâque horâ.

The abdomen was also rubbed with croton and olive oils. The tube was again passed at nine o'clock in the evening, and the patient was considerably relieved by the escape of fluid faecal matter and some air. A warm turpentine enema was then thrown up.

* This remedy was mentioned to me by Dr. Munk.

On the evening of the following day (13th)—the patient being very restless, with a dusky anxious countenance, and complaining much of pains in the back, the abdomen very much distended, but free from tenderness,—nausea and hiccough were noticed for the first time. A pound (by weight) of crude mercury was then administered, and immediately afterwards the sickness and hiccough ceased, and the distention became less distressing. No evacuation was, however, produced.

On the 14th, after consultation with Dr. Addison, it was determined to bleed the patient to the first signs of fainting, and give a minim and a half of croton-oil immediately after the bleeding, and repeat it after two hours. The blood was firmly coagulated, but not buffed. He was much improved after the bleeding; and although his stomach was rendered more irritable by the croton-oil, the bowels evinced a tendency to act, and the patient passed, with a good deal of straining, some clear mucus, and now and then a few small fragments of fæcal matter. Some dirty green fluid fæcal matter, with some air, was drawn off by the tube in the evening, and temporary relief was obtained. A grain of opium, with a grain of calomel, was ordered at bed-time, and to be repeated every four hours.

On the 15th the bowel was washed out, as usual, with the tube; and soon afterwards about a quarter of a pint of green fluid fæces was passed by the natural efforts.

The colocynth and hyoscyamus pills were again ordered every hour for six hours; the warm ablution and turpentine enema in the evening; and the calomel and opium at bed-time.

He passed a restless night, getting up frequently to pass mucus and small pieces of fæcal matter.

On the following morning (the 16th) the tongue was injected and more coated, the abdomen soft, but distended and more painful, the pulse 108, irritable, but regular: the long tube was used, with the same results as before, and a beef-tea enema left in the bowel at 10 A. M.

The constipation had now continued for sixteen days, no satisfactory evacuation having been as yet obtained. Considerable constitutional irritation was also beginning to shew itself; and it was becoming more and more apparent, that, unless some more effective means of relief could be devised, the life of the patient must soon terminate. Accordingly, I held a consultation with my colleague, Mr. Cooper, with a view to considering whether a more favourable result could be hoped for from any surgical operation. It was finally

settled to wait till the following day; and that, if no satisfactory evacuation should have been procured, Mr. Cooper should then perform the operation of opening the colon from the loins.

He was ordered two grains of calomel with a quarter of a grain of opium every three hours. A quantity of fluid faecal matter, larger than on any former occasion, was drawn off by the tube in the evening, after which he felt considerable relief. One grain of opium was given at night, and he obtained some sleep; and in the morning he passed, by the natural efforts, about two pints of dirty green fluid faecal matter, well tinged with bile: his aspect was afterwards improved, his tongue less coated, and his pulse fuller and firmer.

He was ordered half a grain of calomel with the same quantity of opium every four hours.

The bowels having been thus spontaneously relieved, the design of operating was for the time abandoned.

The pain and distention having returned in the evening, were again relieved by the warm-water injection. A beef-tea enema was afterwards left in the bowel, and the opium repeated.

He got some sleep during the night, and on the following day (the 18th) was free from pain, but more feeble and anxious. He did not vomit, but complained of nausea. Tongue less injected and coated: pulse 115, small. He was ordered effervescing saline mixture with four minims of tincture of opium every four hours, and a grain of calomel with a grain of opium night and morning.

He slept a little, and was in no acute pain on the following morning, but the prostration was evidently increasing. About 11 A. M. re-accumulation of air took place, and the tube relieved him of flatus and some faecal fluid.

About 6 P. M. great collapse, cold extremities, urgent thirst, thread-like pulse, cold sweats, without any affection of the intellects, gave sign of ruptured bowel. At 9 P. M. he died.

SECTIO CADAVERIS, March 20, sixteen hours after death.—On reflecting the integuments of the abdomen, its cavity was found to be almost filled by an enormously-distended, thickened, and hypertrophic sigmoid flexure, which had been twice turned on its axis. The descending colon, where it became continuous with this distended sigmoid flexure, passed in front of the rectum. Just above this portion of the colon there was ulceration of the mucous membrane, and in one place perforation of the intestine. The sigmoid colon (Plate II. Fig. 1.) had a twisted root, with a contracted mesentery: it crossed to the right, and suddenly back again: the upper part seemed the

largest, but the whole resembled the stomach of a great turtle with a thickened and inflamed mesentery. The rectum was wide and pale; but immediately above the part where the intestine passed behind the descending colon, dilatation with thickening rapidly commenced. There was great muscular hypertrophy of the sigmoid flexure, and a firm, thick lining, in part diphtheritic. There were no ulcers in this part. The transverse and descending colon were much dilated, tumid, and inflamed, diphtheritic and sloughing, with numerous ulcers: one of them had perforated the intestine just above the commencement of the sigmoid flexure. The small intestines were full and inflamed, and feebly glued together in parts with whitish soft fibrine: there was, besides, extensive recent peritonitis.

The liver, spleen, and kidneys were healthy.

The left colon was, after death, easily opened through the abdominal walls from behind.

It is evident that the twisted sigmoid flexure, where it passed in front of the rectum, did not exert any strong compression upon the latter, as the œsophagus-tube passed readily through the rectum into the distended portion of bowel, where its extremity could be distinctly felt through the abdominal walls: but it is also obvious, that, at this point, the peristaltic motion of the intestine, or at least the passage of its contents, must have been arrested; for it was just above this point that the increase in the calibre of the bowel, and thickness of its walls, commenced. Again, there was manifestly another seat of obstruction just above the distended convolution—at the point, in fact, where the upper turn of the colon occurred; for it was just above this that the perforation took place. But, on the other hand, that this obstruction could not have been complete, or such as in any very great degree to have arrested the passage of the fæces till a very late period, is apparent from the large quantity of fæcal matter washed away by the syringe, and which must have passed from the descending colon into the large pouch between the two points of obstruction, and there have accumulated.

Now it appears, from the previous history of the patient, that, on the occasion of a former attack of constipation, the action of the whole track of the bowel involved was restored as soon as the distended colon was emptied by the œsophagus-

tube; that is, as soon as the lower obstruction was overcome. But the same result did not follow when the same object was effected upon the latter occasion; so that the contractility of the bowel, which was, perhaps, in the first instance, paralysed by distention, or temporarily arrested by some accidental obstruction, must have been destroyed in the last.

The great distention of the convolution in which the accumulation had taken place, together with the hypertrophy of all the coats of the intestine at that part, must evidently have been the result of a series of diseased action that had been going on for a long period—as long, at least, as the time between the second and the last and fatal attack of constipation.

There is, again, another question connected with the etiology of this remarkable case, which is not devoid of practical interest, and that is, whether the distortion of the sigmoid flexure was a congenital mal-position, giving rise to the attacks of constipation to which the patient had been liable, or whether it was the result of a gradual process of distention and thickening, which had been going on for years; and which, although it was eventually the cause of insurmountable obstruction, was, in the first place, the effect of neglected constipation.

Now although it is perhaps impossible to determine whether any unusual tortuosity and size of the sigmoid flexure might or might not have existed at birth, still it is very easy to conceive how, upon the assumption of a moderate degree of distention (such, perhaps, as that shewn in Plate III. Fig. 1.) a further distention, both in the length and calibre of the colon, with twisting of the distended part, such as is represented in the progressive diagrams (Plate III. Fig. 2. 3. 4.), would ensue. And that some displacement of this kind took place is, I think, rendered more probable than that the mal-position was congenital, by the circumstance that the bowel at (*e*) and (*f*) was twisted round its own axis, as well as round the apposed portion of intestine.

The theory of causation most in accordance with the appearances observed appears to me to be the following:—An elongation and distention, somewhat of the nature of that represented in Plate III. Fig. 1. existed from early life; this would, by accumulation of the contents of the intestine and further

distention, assume the position in Fig. 2.; when it is probable, that, under some unusual effort or shock on the part of the patient, or distention in the upper portion (*c*) of the intestine, that portion would fall down below and in front of the previously lower portion (*d*), and bring the bowel into the position shewn in Fig. 3., by which the intestine would receive a twist half round its own axis at each of the points (*e*) and (*f*). This is apparently the condition in which the sigmoid flexure was found in a case of fatal constipation described by Dr. Abercrombie.* Again, it is obvious, that, under continued accumulation and distention, the whole coil of intestine would have become too large to be retained in the pelvis, and must consequently have risen into the abdomen; in doing which it might easily have received another turn, so as to bring the portion (*c*) again above (*d*) (Plate III Fig. 4.), and, in consequence, the intestine would have received a further half turn round its axis at (*e*) and (*f*): and thus would have been produced an entire twist of the colon upon itself, as well as two turns round its own axis, one at (*e*) and one at (*f*).

The bowel may perhaps have remained in this distorted position for a long time, during the whole of which distention and thickening were going on in the portion (*c d*) of the colon (just as in the case of a ventricle of the heart, where there exists a considerable impediment to the circulation), and subsequently in the descending colon: for it is not necessary that insurmountable constipation should have ensued immediately upon the twist taking place, since a similar distortion was observed some time ago in the Inspection Room at Guy's Hospital, in a patient who died of tetanus, and in whom the function of the bowel was not permanently arrested, although he had occasionally suffered from constipation for several days together: whereas it is obvious, upon reference to the drawing (Plate II. Fig. 1.), that the increase in the distention of the bowel would increase the difficulty in the passage of its contents at the points (*e*) and (*f*); and that the enormous size which was ultimately attained might so increase the pressure at these points as to produce insurmountable obstruction.

* "On Diseases of the Stomach," &c. Third Edition, p. 118.

The diphtheritic condition of the sigmoid flexure was, in all probability, the effect of the long-continued irritation of the accumulated feces; and the ulceration in the descending colon and arch was produced by the same cause, aided, it may be thought, by the active purgative medicines which were administered.

Having traced the causation in this instance, I shall reserve my remarks upon the diagnosis of such cases, and treatment, until after relating the following, which affords an excellent contrast to the foregoing.

CASE 2.

Constipation—Sickness without Abdominal Distention—Suppression of Urine—Death.

(Reported by MR. LLOYD).

JOSEPH H——, aged 12, was admitted under my care into the Clinical Ward on the 30th of March 1844. He was a fair-haired, delicate boy, with blue eyes and long eye-lashes, residing in a small apartment in Newington, and employed, for the last four months, as a servant to a zinc and scuttle-maker, handling green and red paint and varnish. Fourteen months ago he had been attacked with a violent crampy pain in the bottom of his belly, followed by sickness, and accompanied by constipation: this attack was soon relieved by purgative medicines. At Christmas he had a similar attack, in which the pains were still more violent after meals; and after that time had been subject to crampy pain in his abdomen, which used to seize him suddenly. He had been affected with intestinal worms till four years before his admission.

On Sunday evening, March 24th, he was suddenly seized with a severe pain across the bottom of his abdomen, and soon afterwards violent retching and sickness came on, and continued the whole night. An aperient powder was given him on the following morning, and he was subsequently seen by Mr. Otway, who employed enemata, calomel, magnesia with the sulphate, and turpentine embrocations and poultices, but without affording much relief, or procuring any satisfactory evacuation. He was brought to the hospital on the 30th, having had no sleep for three nights, and no evacuation, *either of stool or urine*, for six days, except a very trifling one on the 26th.

When placed in bed at the hospital he lay on his side, but was exceedingly restless. The surface was cold and pallid, and the skin harsh and dry: the face congested, and having a blueish tinge: expression anxious: eyes sunken and heavy: cheek-bones prominent:

the whole aspect betokening serious mischief, as well as great prostration. There was great tendency to stupor, but his intellects were clear: voice feeble: tongue clean but dry: no blue line on the gums. The first sound of the heart was almost lost in the second. There was *no considerable distention of the abdomen*, nor any great tenderness on pressure: the integuments were flaccid, and the muscles somewhat contracted, and the surface of the abdomen cold. No hernia could be detected. *No urine for five days.* A little ammonia julep was given him immediately, and two grains of calomel with half a grain of opium ordered every four hours. An injection of beef-tea with wine was also given, but returned as fast as thrown up, the boy complaining of great pain; and the nurse stated that there was some obstacle to the passage of the pipe. He took some wine and arrow-root, and was free from sickness till about five minutes before ten, when he suddenly rejected the contents of his stomach. At that time his body was warmer, but the extremities still cold, and he was less restless. The rectum was examined by the finger, when there appeared to be a puckering of the intestine, with a contracted portion, feeling like a sphincter.

During the early part of the night he was very restless, but became composed towards twelve o'clock, and got some sleep. He took some wine and water at intervals, and was free from sickness. He complained of pain in his belly once in the night.

On the following morning (the 31st) he was extremely low, but quieter: the hands still cold, but the body warm: pulse 113, thready: respiration 16, and diaphragmatic: tongue dry, with a tendency to become brown. He lay in a state of stupor, with the pupils somewhat contracted. No urine having been passed, the catheter was introduced, and one ounce, pale and straw-coloured, and free from albumen, was obtained. He took, and retained, a considerable quantity of wine and arrow-root. He appeared, in the evening, as if stupified with opium, being roused with difficulty, and his pupils being contracted.

He was restless during the night, but had no sickness. On the following morning (April 1st) an ounce and a half of urine, which was slightly clouded by heat, was drawn off: his pulse was then 94, and exceedingly weak.

He died at 4 P.M., having been conscious to the last.

SECTIO CADAVERIS, twenty-four hours after death.—*Chest.* The lungs were rather watery, and somewhat mottled with red spots and very slight fleshiness.

Abdomen.—On the surface of the peritoneum were scanty fibrinous

deposit, redness, and discolouration, with slight cellular adhesions. The stomach was dilated with gas, and contained dark bilious fluid. About four turns of the upper part of the jejunum were widely distended, dark, and rather thickened: the three lower of them the most sound. At the end of this portion was a distinct, thick, soft, circular cord, of rather recent cellular membrane, obstructing the gut, but adhering to it loosely at most parts; a large probe passed easily under the cord: the beginning of the chief dilatation in the duodenum was also bound to it, as also an intermediate portion. (See Plate II. Fig. 2.) When laid open, the bowel seemed remarkably free. The whole contained fluid *feces*. Liver rather tumid. Kidneys full and soft. Pancreas red.

The chain of causation in this case seems to be much more obvious and simple than in the preceding. It may perhaps be briefly stated thus:—Old peritonitis: frequent subsequent attacks: adhesion of the coils of the jejunum: impediment to the peristaltic action, and to the passage of the contents of the canal: formation of false membrane, constricting the canal, increasing the impediment, and giving rise to total obstruction: inversion of the peristaltic action, and death.

It is perhaps worthy of remark, that in this case, as in the preceding, there were more points of obstruction than one, and that in no one point did the obstruction appear complete; for there was great distention of the duodenum above the point (a), as also of the duodenum and commencement of the jejunum between (a) and (b); whereas the distention of the jejunum, and of the commencement of the ileum between (b) and (c), though considerable, was less than on the other side of the point (b): so that the final obstruction which led to the fatal result, although it might have been brought about at the last by the pressure of the bridle of false membrane upon the ileum at the point (c), was but the termination of a series of diseased action, involving the whole track of the intestine from the pylorus to that point.

The manner of death at the last, in this and the former case, was nearly the same. In the former instance the patient sunk almost directly from peritonitis producing fatal depression of the heart's action, or death by syncope.* In the second

* Alison's "Outlines of Pathology and Practice."

there was the same depression of the heart's action, coming on rather more gradually; but there was associated with it a tendency to coma, or rather stupor without delirium, which is one of the forms of cerebral disease dependent upon suppressed function of the kidney described by Dr. Addison in a preceding Volume of these Reports†, and which was probably the result, in this instance, of the almost total suspension of that function for several days.

Having now endeavoured to trace the causation in each of the foregoing cases individually, I proceed to make a closer comparison of them, in the hope that, by observing the points of difference, we may obtain some further insight into the diagnosis of these affections. In both cases was there nearly insurmountable obstruction to the function of the bowels, and in both was the obstruction primarily of a mechanical character; although in both it is highly probable that the mechanical obstruction would not have been sufficient to arrest the passage of the contents of the canal, without the consequent or concomitant disease of the obstructed intestine. In both, too, was the manner of death nearly the same‡ at the last: but here the resemblance ends, as the greater number of symptoms were, as nearly as possible, opposite in the two cases.

1. In the first case there was little or no abdominal pain at the commencement: in the second it was one of the earliest symptoms.

2. In the first case there was no sickness till a very late period: in the second it was urgent from the beginning.

3. In the first case there was great flatulent distention of the abdomen: in the second there was none.

4. In the first the urine was abundant in quantity: in the second there was an almost entire suppression of that secretion.

5. In the first case the circulation was well maintained in the extremities, until the symptoms of perforation manifested themselves: in the second there was early collapse.

† Vol. IV. p. 2.

‡ The final sinking was, however, brought about differently in the two cases: in the second it was the *immediate* result of the disease; in the first it was produced *mediately* by the peritonitis caused by the extravasation which was the consequence of the disease.

Let us, then, for a moment, consider how far these differences in the symptoms are to be explained by the differences in the nature and seat of the disease in the two cases.

1. As regards the pain.—It is, I believe, to be explained by the nature, as well as by the seat of the affection, there having been, in all probability, a certain degree of peritoneal inflammation in the second case throughout the whole of the fatal attack. At the same time there can be no doubt that the sensibility of the intestinal canal is greater in the duodenum than in the lower bowels, and consequently the pain and depression produced by obstruction and irritation in this situation is also greater.

2. The absence of sickness in the first case is to be accounted for by the situation of the obstruction: for I believe that it is now clearly shewn, by experience, that obstruction in any part of the small intestines, or in the cæcum, is necessarily productive of early and urgent sickness; whereas this effect is not necessarily produced when the stoppage occurs in the colon or rectum; and this exemption is the more frequent as the distance from the cæcum is greater. It does not, indeed, unfrequently happen that sickness occurs early in obstruction situated in the ascending colon; and that it also sometimes takes place when the transverse or even the descending colon is the seat of the disease: but that, under these circumstances, it is the result of some concomitant circumstance (as, for instance, the pressure of the tumor arising from the distended bowel), and not the necessary and immediate consequence of the obstruction, is shewn by this and similar cases in which there has been no vomiting till very late in the disease; whereas it is never absent when the obstruction is in the small intestines. So that whilst the presence of early sickness affords only *presumptive* evidence that the obstruction is in the small intestines or cæcum, the absence of that symptom amounts to a *proof*, that, if it exist, it is situated in the colon or rectum.

3. The difference between the two cases, in regard to abdominal distention, is to be accounted for wholly by the difference in the seat of the obstruction: for as, in such cases, the intestine below the obstacle is always found empty, whilst that above it is distended with gas and fæcal matter, the distention must necessarily be the greater in proportion

to the distance from the pylorus. At the same time, it should be observed that the small intestines are capable, when obstructed, of great distention. This took place, to a considerable extent, in the case of Joseph H—— (Case 2), which accounted for the abdomen appearing naturally full during life, although so large an extent of the alimentary canal must have been perfectly empty. When, however, the obstruction is very near the pylorus, the abdomen appears preternaturally empty and shrunken: this was remarkably evident in a case which occurred in this hospital under the care of my colleague, Dr. Hughes, and in which the duodenum was tied down by a band of false membrane. Hence it appears that a very distended abdomen affords strong presumptive evidence that the seat of the obstruction is in the large intestine, and that a very flat and shrunken one is a proof that it is situated near the pylorus. When, however, the obstruction is in the jejunum or ileum, the abdomen will not be remarkably distended, or the contrary—the dilatation of the upper part of the small intestine compensating for the emptiness of the lower portion of the canal: and consequently, when this condition of abdomen is observed in connection with the other signs of constipation, the probability is, that the stoppage exists in some intermediate part of the small intestines.

4. The contrast between these two cases in the quantity of the urinary secretion is so remarkable, as almost at once to lead to the belief that it was the necessary result of the difference in the seat or nature of the obstruction; a belief which is strengthened by the fact, that, in Case 2, the suppression of urine came on at the same time with the other symptoms. And, further, in cases of this nature, where no fluids can pass into the alimentary canal, and where, in consequence, none can be absorbed, we should be led to expect, *à priori*, that the urine would be very little in quantity. We have, then, rational grounds for believing, that, in cases of constipation where the urine is very deficient in quantity, the obstruction is probably at the upper part of the canal; and that where it is abundant, at the lower*. In confirmation of this diagnostic sign, I may remark, that in the case

* Where the obstruction is low down in the small intestines there will be no suppression.

already alluded to as occurring in this hospital under Dr. Hughes, where the obstruction was situated very high up in the small intestine, the urine was nearly suppressed; and in the similar one, mentioned to me by Dr. Munk, there was such an entire absence of that secretion, as to give rise to the opinion that the disease was seated in the kidneys, and not in the bowel.

5. The early collapse, in the second case, is no doubt, in some measure, to be ascribed to the greater amount of peritoneal inflammation. It cannot, I think, be wholly explained by it; for it was much greater than we often see in far more extensive peritonitis, and more nearly resembled that which has been observed in cholera. Now, although any sudden and violent irritation of any of the tissues composing the alimentary canal, and at any part of the canal, will produce a depression of the heart's action, varying in some measure according to the intensity of the inflammation, still I believe, that, *cæteris paribus*, the depression will be greater when the upper part of the alimentary canal, but more especially the duodenum, is the seat of the irritation;—a circumstance which may, perhaps, be explained by the intimate connection of that portion of the intestine with the solar plexus.

It appears, then, that in cases of constipation where there is great abdominal distention, with little or no sickness till a late period of the disease, and an abundant secretion of urine, the seat of the obstruction is in the colon or rectum; and that if there be no great degree of pain or tenderness, this obstruction is probably dependent upon some mechanical cause.

Where, on the other hand, the abdomen appears empty, or but moderately distended—where there is early vomiting and great deficiency in the quantity of urine—and, more especially, when to these symptoms there are added considerable pain, with a tendency to collapse—the affection is probably in the course of the small intestines, and, for the most part, near the pylorus: but where the last-named symptoms are present with the exception of deficient urine, the disease is either in the cæcum or lower part of the small intestine.

The diagnosis as to the exact nature of this obstruction will, I believe, be more difficult in this case than in that of the large

intestine. The existence of peritonitis or enteritis may, no doubt, be often inferred from the existence of the signs of inflammation: still we should remember that these signs are often masked by the depression which often supervenes very early in affections of the alimentary canal, especially of the stomach and smaller intestines. As to the distinction between simple ileus and obstruction from mechanical causes, the cases related by Abercrombie and others seem to point out an almost entire identity of the symptoms in the two affections; which is perhaps to be accounted for by the identity of the diseases themselves: the ileus being, in the one case, idiopathic, and in the other produced by a mechanical obstruction.

Allusion has already been made to the possibility of a difficulty in distinguishing intestinal irritation from ischuria renalis; and although, in the case of Joseph H——, there never was any serious belief entertained that the patient was labouring under the latter disease, still the almost entire suppression of urine, combined with some other symptoms that might be referred to nephritis (the only cause of ischuria which I have witnessed), could not fail to impress one with the belief that such a difficulty might arise, and a case has been cited in which it actually did occur. It cannot, therefore, but be of service to bear in mind the possibility of an error of this kind. The existence of constipation alone would not be sufficient to decide the question; for in nephritis the sickness is sometimes so obstinate as to invert the peristaltic action of the upper portion of the canal, and consequently, after the lower bowels have been emptied, to induce a suppression of all alvine evacuations; so much so, that nephritis is as liable to be confounded with ileus as the contrary, or even more so. In the case of Joseph H——, the circumstance of the patient having previously suffered from constipation, and the seat and peculiar character of the pain, which was also more severe than in nephritis, together with the rapid collapse, were hardly reconcilable with inflammation of the kidneys; whilst the small quantity of urine which was obtained was neither bloody nor albuminous, which would have been the case had the disease been seated in the latter organs.

Before quitting the subject of diagnosis, it may be

remarked that we are now in possession of the means of recognising, with tolerable certainty, a distortion of the sigmoid colon, similar to that which was observed in the case of George J——. Thus, supposing that in a case of obstinate constipation it was ascertained, by the signs which have just been pointed out, that the obstruction existed in the lower bowels, the next thing to be done would be carefully to explore the rectum and lower part of the colon. If a bougie were to be used for this purpose, it would, in such a case as we are now supposing, pass without much difficulty through the part *g* (Plate III), where the rectum would be pressed upon by the descending colon, and would be stopped at the part (*f*) by the intestine taking a sudden turn. This would be indicated by some pain and resistance; and of course all attempts to pass it further should be desisted from. Recourse must then be had to the flexible tube, which would, under such circumstances, pass readily, and its extremity might be felt, through the abdominal parietes, passing suddenly to the right: this, then, would indicate a distortion such as is represented in figures 2. 3. or 4. The next step would be to wash out the bowel by means of the syringe; after which, if no evacuation were obtained, there would be reason to suppose that a second obstruction existed higher up, which would indicate such a turn of the intestine as is represented in figures 3. or 4. The abrupt turn of the sigmoid colon to the right requires great caution in the use of the bougie; and is, moreover, a circumstance by which the operator ought by no means to be taken by surprise: for not only was it observed in this and other similar cases upon record; but it appears to be almost a necessary consequence of great distention of this part of the canal, and is therefore to be expected wherever such distention may be supposed to exist.

I now proceed to consider the means of relief adopted in these cases, with a view to determining the course which it is best to pursue in others of a similar nature.

It is, I believe, generally admitted, that after moderate use of purgatives shall have failed, it is advisable to adopt gentler means, and rely chiefly on enemata; and not—in the words of Dr. Copland—“to prescribe medicines which

will irritate and invert the action of the upper part of the tube without ever reaching the seat of the obstruction." But I believe that it is not so generally considered that active purgatives may produce serious mischief, even when they do *not* invert the action of the tube, and when they *do* reach the seat of the obstruction; whereas it is evident that in the case of George J—— any forcible effort to propel the contents of the bowel beyond the seat of obstruction must have been productive of much irritation immediately above it, and have increased the risk of laceration. Cases, too, may occur, in which the constipation is the effect of an arrest, on the part of nature, of the peristaltic action of the intestines, lest it should interfere with some process of reparation: of this, a remarkable instance was once related to me by my colleague, Mr. Cooper. The patient, who had resided much in a hot climate, had been previously subject to attacks of constipation, which Mr. Cooper inferred, from his account, had been caused in the manner just alluded to, in order to allow the closure, by means of adhesion, to a neighbouring viscus, or to the abdominal walls of a perforating ulcer of the colon. A powerful purgative was, however, administered, contrary to the advice of Mr. Cooper, and produced fatal extravasation into the peritoneum.

In the case before us, indeed (that of George J——), the symptoms were more those of a simple loss of contractility of a certain portion of intestine, the only urgent symptom being the abdominal distention: and as there was no sign of any inflammatory affection, there seemed little objection to the use of purgatives; the more so, as, when the distended intestine had been relieved of a large quantity of flatus by means of the tube, we had reason to believe that we had overcome any mechanical obstruction that might have existed, and, consequently, that the next object was to stimulate, if possible, the torpid bowel into action: for before the occurrence of this case we were not in possession of the means of recognising this distortion of the sigmoid flexure so correctly as I hope that we may now be enabled to do; and, consequently, we had not the same ground for suspecting a second seat of obstruction, which must necessarily exist when the colon is thus twisted upon itself. Still, I

think that the experience of this, and cases of a similar nature which have been recorded, tends to shew, that, under such circumstances, drastic purgatives given by the mouth are ineffectual, and consequently injurious.

The crude mercury which was given to the patient never, in all probability, passed the ileo-cæcal valve, as none was ever voided per anum, and none was found after death in the colon; but a considerable quantity was observed at the lower part of the ileum. The only notable effect which was produced by it was the sudden suppression of the sickness; and this, Dr. Abercrombie remarks, is the only advantage which he ever obtained from it: it may, no doubt, be made available for this purpose, more especially when the mechanical obstruction is in the small intestines; in which case, too, I believe that it is more likely to be of service in opening the bowels than in cases like that which we are now considering.*

Having, then, seen that no reliance can be placed on purgatives administered by the mouth for overcoming difficulties of this nature, and that considerable mischief may be occasioned by the use of such medicines in their most powerful forms, the question remains, What is the best course to pursue?

Supposing, then, in a case of constipation which has lasted several days, that it appears probable, from the distention of the abdomen, the absence of sickness, and an abundant secretion of urine, that the obstruction is situated in the lower bowels, the first step should be to exhibit some efficient but not irritating purgative; such as a full dose of calomel with half a grain of opium, followed, in a few hours, by castor-oil, which may be again repeated: or four or five grains of compound extract of colocynth with one or two of extract of hyoscyamus may be given every hour for six or eight hours; or, should time be allowed by the absence of any very urgent symptoms, both the above means may be tried: copious enemata should also be administered once or twice in the twenty-four hours; and where there exists the slightest

* A Case is quoted in the Medical Gazette for June, in which fatal constipation was the result of a twisting of the ileum upon its axis; and the question is there asked, whether this obstruction might not have been overcome by crude mercury?

suspicion of any inflammatory action, a full bleeding should early be had recourse to.

Should no evacuation be obtained by these means, it may be well to explore the rectum with the finger or a bougie, or both, with a view to ascertaining the existence of any obstruction in that portion of the bowel. The flexible tube should next be cautiously introduced, and the lower part of the bowel well washed out by copious injections of warm water, which may be drawn off by the stomach-pump. After this has been done two or three times there will generally be an opportunity of feeling the extremity of the tube through the abdominal parietes*, by which its direction, and the position of the bowel, may be ascertained, and the existence of such a position of the colon as one of those in figs. 2. 3. and 4. Plate III. detected. Should there be a simple distention, such as that shewn in fig. 2., it is probable that the upper portion of the intestine will empty itself into the distended part; and, with a view of promoting this, a moderate purgative may again be administered, and a turpentine enemata thrown up by the flexible tube. But should no evacuation be procured in this manner, it will become probable that there is a second obstruction above the distended portion. The further exhibition of purgatives by the mouth will then be useless, or even injurious, and our efforts should be limited to the persevering in washing out of the lower bowels, and the occasional exhibition of calomel and opium; as it may happen even yet, that, by diminishing the distention, the pressure at the points (*e f*) may be so far diminished as to allow of the passage of the contents of the bowel.

Should it, however, happen, as there will be too much reason to apprehend that it will, that the increasing distress of the patient shews that accumulation and distention is taking place in the descending and transverse colon, the question will then arise, Can any thing further be attempted for the relief of the patient? Considering that a mechanical obstruction must, if unrelieved, speedily prove fatal; and that we are able on many occasions to ascertain, with tolerable certainty, the presence of an obstruction in the sigmoid colon when it

* In Case I. the extremity of the tube was most distinctly felt in the right hypogastric region.

exists; I think that we should be justified, under such circumstances, in opening the descending colon from behind. I am aware, indeed, that, in those cases in which an artificial anus has been made in this situation, it has been a source of much discomfort, or rather distress to the patient; and that there cannot be much probability of restoring the natural passage. Still, as I have always held that it is the duty of the physician to prolong life to the utmost, I think that the operation would be more than justifiable where the diagnosis was satisfactory, particularly as we should thereby gain time, both for the restorative efforts of nature and for the application of any means which our ingenuity might devise.

In cases in which the distention seems to be relieved after the use of the tube, and evacuations containing recent bile are brought away, either by the natural efforts or through the tube, and in which there is probably a condition of the colon such either as that in Fig. 2. or Fig. 3., the lower bowels should, in the first place, be well-emptied by warm water thrown up through the tube, and the peristaltic action encouraged by turpentine enemata, and gentle purgatives administered by the mouth; after which it would be right to endeavour to restore the contractility of the bowel: for this purpose enemata of cold water and possibly galvanism, as recommended by Dr. Abercrombie will be of service.

In the case of Joseph H——, the almost dying condition of the patient when admitted into the ward rendered the prospect almost, if not entirely, hopeless: the only plan of treatment, therefore, which could be adopted, was, to support the sinking powers, to use such remedies as might be likely to allay the irritability of the patient, and subdue any inflammatory action without increasing the depression. The action of the bowels was also attempted to be stimulated by a turpentine enema; but so firmly were the lower intestines contracted, as is often the case below the seat of the obstruction, that it was hardly possible to inject it into the rectum. In this case, too, we fully anticipated that there would ultimately prove to be a constriction of the small intestine, rather towards its upper extremity, and that that constriction would be caused by adhesion or false membrane, the product of previous peritonitis; for, in addition to the signs which have

been already adduced as diagnostic of the situation of the obstruction, the history of the patient afforded reason for believing that he had been previously affected with peritonitis, although he had at the time none of the tenderness on pressure which belongs to the acute form of that disease; neither could any hernia, or tumor of any kind, be detected upon the most careful examination of the abdomen. The probability of such a cause of obstruction only increased the expectation that all means of relief must fail.

The question may, however, here be asked, whether, after the above means have been tried, as well as others which may appear more adapted to the peculiar symptoms and condition of the patient, and we have fair grounds for supposing that there exists some such cause for the obstruction as that found in the case before us, we are to resign the patient to his fate, or, at all hazards, to open the peritoneum, and release the constricted bowel? This, I must confess, is a proceeding which, in the present state of our knowledge, I should be unwilling to recommend, on account as well of the uncertainty of the diagnosis, as of the danger of the operation. Yet when we call to mind what was the opinion entertained, so late as the time of Heberden, of the expediency of operating for strangulated hernia—"The operation of dilating the ring with a knife, and by that means freeing the gut from the stricture by which it is supposed to be strangled, is, as far as I have observed, very rarely, if ever, advisable;"—"No one who has ever seen it performed can help having a dread of directing such a hazardous operation too soon, or such a painful one too late: and we are, I think, greatly at a loss for any rules of finding in what case, and at what precise time of the illness, this operation may be successful, and nothing else;"—when, I say, we read such expressions as these of so judicious a physician, respecting an operation, of the occasional expediency of which no doubts are now entertained, may we not hope that medical science may yet be enabled to say when such an operation as that which I have been suggesting, and nothing else, may be successful, and surgical skill be adequate to perform it with comparative safety?

In the mean time, however, I would recommend, that, as we must for the most part be ignorant of the cause of the

ileus, we must regard it as the primary affection, and treat it accordingly; and in so doing we must be guided rather by the general condition and powers of the patient than by any notions we may entertain of the inflammatory or non-inflammatory nature of ileus: for it is certain, that, whether inflammatory or not in its origin, it has a strong tendency to terminate by inflammation; and, moreover, experience has taught us the benefit of depletion in most cases of this disease. In the words of Dr. Abercrombie, blood-letting is a most important remedy in every case of ileus, unless distinctly contra-indicated by the age or habit of the patient.

Accordingly, when we have to treat a patient with the ordinary symptoms of ileus, and in whom we can discover no hernial tumor, or other cause of mechanical obstruction, and in whom there is no notable want of power in the circulation, or appearance of anæmia, a full bleeding, which may be repeated within the next twenty-four hours if the patient appear able to bear it, should never be omitted: an efficient purgative, guarded, perhaps, by an opiate, should also be administered; but after this the exhibition of purgatives by the mouth ought by no means to be persisted in. Purgative enemata should, however, be assiduously employed; as I believe that, in these and many analogous cases, we shall be likely to effect our purpose more certainly, and with less risk to our patient, by stimulants applied to the part into which the evacuation or secretion is to be poured, than by endeavouring to force a passage by means of any *vis a tergo*. Calomel, in doses of from one to two grains, with about a quarter of a grain of opium, should be given every three or four hours, and may be persisted in, should no relief be obtained before, until the mouth is slightly affected; and leeches may be applied to the abdomen, especially if there exist any tenderness there. Still I believe that in the treatment of this, as of all other urgent disease, a great point will be to determine when to hold our hand for a time, and give opportunity for the operation of nature and the action of the remedies which may have been previously applied. An illustration of this occurred in my own practice but a short time ago.

I was requested, in the evening of the 29th of July last, to see, in consultation with my friend, Mr. J. Boast, a young

man in the Borough, who had been for some days suffering with the symptoms of ileus. He had, when I saw him, little, if any, abdominal tenderness, but paroxysms of pain, which were so violent and painful that he could with difficulty be kept in bed. His pulse was about 80, moderately full and compressible; urine not scanty; occasional sickness. He had been bled by Mr. Boast, and leeches applied to the abdomen, and calomel and opium given in moderate doses. The blood was neither cupped nor buffed. He was again bled, and nearly the same plan of treatment pursued, with addition of copious injections of warm water, warm bath and repetition of the leeches. On the evening of the 30th his pulse appeared more compressible, his skin perspirable and he had passed some flatus: we therefore determined to withhold all medicine, except ordering five grains of soap and opium pill in case the paroxysms of pain should return. The pill was administered; and in the course of the night he passed a moderate bilious motion, and from that time went on favourably.

Cases, however, occur, in which, after the pain and any inflammatory action which may have been present have been subdued, a purgative may be exhibited with the most marked benefit: of this an instance has occurred to me whilst preparing these remarks for the press.

On the 15th of August I was requested to meet Mr. Caudle, of Guildford Street in the Borough, in a case of constipation attended with considerable depression, urgent sickness and pain, with some tenderness just above the umbilicus, and scanty urine. Bleeding, leeches, a turpentine enema, and calomel with opium had been promptly resorted to by Mr. Caudle. Her pulse, at the time of my seeing her, was compressible, and had not the wiry character which it evinces in enteritis. Two grains of calomel with a quarter of a grain of opium were ordered every three hours; and in the following evening (the 16th) she was in less pain, the tenderness was diminished and the sickness was less: she had also passed a fair quantity of urine the preceding twenty-four hours: her pulse was compressible, and countenance less anxious. Her bowels having shewn no disposition to act, and the inflammatory symptoms appearing to be subdued, it was thought expedient

to try a gentle purgative. The elastic tube was introduced, but was not passed more than eight inches, as it seemed to be obstructed either by a fold of mucous membrane, or coming in contact with the walls of the intestine: it gave exit, however, to some flatus; and between two and three pints of water was thrown into the bowel, about half a pint of which returned through the tube, tinged with fæcal matter. Twelve grains of extract of aloës with a grain of opium and a little soap were then ordered to be made into four pills, of which one was to be taken every two hours. She passed two satisfactory evacuations early the following morning; and, as I was informed, continued to go on favourably.

Cases again sometimes present themselves, most commonly amongst females, in which accumulation appears to take place from a defective action of the muscular coat of the bowel, depending probably upon a want of tone in the system. In such cases bleeding is, I think, contra-indicated. Of this I have very lately had an instance in the wards of the hospital.

A young woman, with somewhat pale prolabia, and of apparently lax fibre, was a short time ago admitted into Dorcas Ward, under my care, having had no evacuation for four days. She took moderate purgatives for two or three days, but no evacuation was procured: she became troubled with obstinate vomiting, and the urine became very dark and scanty. She was then put upon the use of the calomel and opium, and a turpentine enema was given at night. On the following day she had obtained no relief. She was directed to continue the medicine; and at night the elastic tube was passed up to the length of about two feet, and three pints of warm water were thrown up: a short time after this the bowels were freely relieved. She was, on the following day, directed to take some manna and tartrate of potass in a bitter infusion three times a day, and left the hospital well at the end of three weeks from the time of her admission.

In the case which follows it is probable that at the time of admission the patient was suffering from accumulation in the large intestines, and in all probability he had, at the commencement of his illness, considerable accumulation in the transverse colon, producing pressure upon the stomach, and possibly accompanied by considerable inflammation or irritation in the stomach or duodenum.

CASE 3.

Constipation, relieved by Purgatives, and Enemata.

Reported by MR. LLOYD.

AUGUSTUS B——, aged 32, a light complexioned man, of irritable temperament, was admitted into Job Ward, April 3, 1844. He was married, and had resided for four years in the neighbourhood of Smithfield, where he had followed the trade of a tailor. He had previously been abroad as a marine, and was ruptured at the taking of St. Jean d'Acre. He had been, for the most part, subject to relaxed bowels, but, with this exception, his health had been good. He had been very intemperate whilst abroad, but since his return has been subject to considerable privation, and had never drunk to excess. He had never been, as far as could be ascertained, exposed to the poison of lead. Three weeks previously to his admission he had pain in his head, shivering followed by heat, thirst, pain in the limbs, lassitude, and depression of spirits; but his bowels did not become confined till six days before admission. He passed a good deal of flatus during the preceding week; and, till the Friday before his admission, he was exceedingly sick, throwing every thing off his stomach as quickly as he swallowed it. He also lost flesh and strength rapidly.

Symptoms on admission.—Thirst, debility, anorexia, and general pyrexia. Intellects clear; but he answered slowly, as if the exertion was too much: great depression of spirits: tongue highly coated with a thick fur: chest resonant throughout: heart's action irritable:

Abdomen not distended: there was general tympanitic resonance: no evidence of rupture: no particular pain: bowels not open for six days: urine in good quantity, loaded with lithates.

He was ordered the following pills:—

Aloës Barbados. gr. x. Acid. Sulph. m. iij. fiant. pil. iij. st. sumend.; et repet. post horas tres, si opus sit.

The pills having had no effect, a turpentine enema was administered; but, owing to some mistake, the matter brought away was not seen: the patient, however, asserted that fecal matter came away, when the enema returned.

On the following day (the 4th) he said he felt relieved, but had had no evacuation since the doubtful one of the preceding evening.

Eight grains of compound extract of colocynth, with two of calomel and five of extract of hyoscyamus, were given immediately, and half an ounce of castor-oil four hours afterwards. As, however, he had no evacuation before night, the turpentine enema was repeated, and soon returned, accompanied by a copious motion, and his bowels afterwards acted again spontaneously.

On the 5th he was ordered the following mixture :—

Haust. Sennæ. Infus. Gent. Co. āā ʒi. Spir. Ammon. Aromat. ʒss. bis quotid.

On the 6th his bowels had been freely opened twice : on the 8th his appetite was returning, and his tongue cleaning ; and on the 10th he was presented, cured.

In the preceding observations considerable stress has been laid upon the quantity of the urinary secretion, as a diagnostic sign of the situation of the obstruction in cases of constipation : for it seems that where there existed a perfect obstruction in the upper part of the small intestines, there was almost a total suppression of urine ; where there was a diminution of the calibre of the canal* in the same situation the urine was diminished in quantity ; and where the small intestines were free, and the obstruction was seated in the colon, the urine was very abundant. If, then, we regard this statement of facts merely in a diagnostic point of view, as aiding us in determining the probable seat of obstruction in the alimentary canal, it will not be without its use ; for every symptom must now be considered important which can help us to decide a question, the answer to which will go far towards determining the expediency of endeavouring to relieve an insurmountable obstruction by surgical operation.

It is not, however, merely in regard to its diagnostic significance in this or that disease that we are to regard a circumstance that meets us under so many different, and even opposite conditions of the system ;—when the skin is dry and parched, and when there is excessive perspiration ;—in profuse diarrhoea, and in insurmountable constipation ;—in disease of the arteries, as well as of the veins ;—of the lungs, as well as of the heart ;—of the liver, as well as of the kidneys. The occurrence of this single point of resemblance in conditions of the system often diametrically opposite, is a fact too remarkable to be passed over, and is one, the further investigation of which may possibly throw some light upon the circumstances which determine the quantity of the urinary secretion, and afford some assistance in directing our efforts to regulate it.

It need hardly be observed, that, in tracing causation in morbid phenomena, we are not to be guided, *to the letter*, by

* See Appendix, p. 414.

the same rules which we observe in natural philosophy, and assume that the occurrence of the same symptom in a number of cases is necessarily the result of the same primary lesion in all; for as morbid phenomena often depend upon the non-performance of some healthy physiological function, which function consists, in most instances, of a series of steps, any one of which being interrupted the process cannot be completed; it follows, that several disturbing causes may exist, any one of which would be capable of producing the disturbance observed. What we have to do in such cases is to endeavour to find a *vera causa* for the obstruction, and to ascertain that it is capable of producing the effect assigned to it, i.e. of arresting the performance of the function in question.

The sources whence the urine is derived are now, I believe, acknowledged by most physiologists to be three. 1. The water taken into the alimentary canal with the ingesta. 2. Those soluble substances which are taken in the same way, and which do not undergo decomposition in passing through the extreme circulation of, *e.g.* the neutral salts of metallic bases with mineral acids, which appear to act as stimulants to the kidneys. 3. Those lower organic products which are formed in the extreme circulation, or, in the phraseology of Liebig, the products of the transformation of tissues, *e.g.* *urea*, *urates*, &c. In order, then, to the due secretion of urine, the following conditions are essential:—An absorption of a sufficient quantity of water from the ingesta to hold the salts, the decomposed soluble matters, and the products of the transformation of tissues, in solution: the free transit of this water and soluble matters through the portal veins, the liver, the right side the heart, the lungs, and the left heart, to the kidneys: a healthy condition of the extreme circulation, whereby the normal product of the transformation of tissues may be duly formed: a condition of the kidneys adequate to the carrying all these matters out of the system when applied to them by the blood. If, therefore, any one of these conditions be vitiated by disease, the secretion of urine will be impeded, either as regards its quantity or the proportion of the solid contents.

Into the question of the conditions requisite to the formation

of the normal solid contents of the urine in the extreme circulation it is not my intention to enter, as it is not immediately connected with the series of cases which I am now laying before the profession; and it is one which I most gladly leave in the hands of far abler organic chemists than myself: the proposition which I wish to establish may be thus enunciated:—

If a sufficient quantity of water cannot be received into the small intestines, or the circuit through the portal system into the vena cava ascendens, or thence through the lungs and heart into the systemic circulation, be obstructed, or if there be extensive disorganization of the kidneys, the due secretion of urine cannot be effected.

That the urine must be deficient in quantity in cases where no fluid can be taken into the system, either on account of its being immediately rejected by vomiting, or of any obstruction in the duodenum, needs, I think, no demonstration; and is proved by experience in the case of Joseph H—— (Case 2.), and those which have been cited as occurring under the observation of my friends Dr. Hughes and Dr. Munk.

We should also expect, *à priori*, that where there exists any considerable obstruction to the portal circulation, the transit of water from the primæ viæ into the general circulation must be impeded; and that when this obstruction is very great there will be a very great deficiency in the quantity of urine. The following case, if carefully analyzed, will, I think, afford demonstrative evidence of the truth of this opinion.

ASCITES FROM OBSTRUCTION OF THE ASCENDING CAVA.

CASE 4.

Obstruction of the Cava, as high as the right auricle—Ascites—Scanty Urine—Paracentesis—Peritonitis—Death.

(Reported by Mr. G. ROSE.)

HENRY S——, aged 36, was admitted into Job Ward, April 3, 1844. He was a large plethoric man, sallow, but fat. Had been a carpenter at Gravesend, was married, had lived freely, and had enjoyed excellent health till four years before his admission; at which time, when working hard, and eating and drinking to excess, he was attacked with acute jaundice, with much bilious vomiting; and he had been ever after much troubled with indigestion and frequent rheumatic complaints. A year and a half before his admission, he says that he caught cold, was feverish, and suffered much pain round the abdomen,

and at the same time the superficial veins of the abdomen became enlarged, and this enlargement has been increasing ever since. He recovered and relapsed several times; had ague, and, with it, violent and incessant vomiting and dyspepsia. Some months after the ague, whilst still debilitated, he suddenly passed some fluid darkish blood with his urine: this was stopped in a day or two by acids. Three days before his admission his abdomen began to swell, and gradually increased.

Symptoms on Admission.—Respiration unembarrassed, but the chest was generally dull on percussion anteriorly: heart's action distinct; a pulsation was occasionally lost; sounds natural: pulse hard, and vibrating: abdomen excessively distended with fluid, which gravitated, allowing the intestines, which were flatulent, to float: over the whole of the right side there was dullness, extending high on the chest. The superficial abdominal veins were enlarged to the size of the finger: on the right side they were much more numerous, and extended up the thorax: bowels regular: urine scanty, and coloured with bile and lithates: extremities cold, but not œdematous: skin warm and perspirable. He was ordered fifteen grains of rhubarb and calomel immediately, and the following mixture:

Ext. Taraxaci \mathfrak{z} i. Potass. bicarb. gr. x. Sp. Ammon. Arom. m xx.
Decoct. Al. Comp. \mathfrak{z} ij. Aq. Piment. \mathfrak{z} i. t. d. s.

The aperient relieved him, and brought away some lumpy clay-coloured stools: urine very scanty and thick from purpurates and bile.

6. Urine the same: bowels open: stools contain more bile, soft, brownish. Ascites the same: veins emptying, diminished much in calibre: has pain on turning upon the right side.

8. Urine the same (scarcely \mathfrak{z} xvi per day); contains less bile: bowels open: tongue clean: icteritious tinge very apparent.

10. Urine thicker and darker, with purpurates; and stools green and lumpy.

Pil. Scillæ c̄ Hydr. gr. x. om. noct.—P.

12. Urine increased in quantity, with red sandy sediment very abundant: no purpurates: stools lax, more abundant, of dark brown colour: ascites rather diminished: abdomen flaccid.—P.

14. The same.

15. Urine very scanty, and loaded with lithates: bowels open: distention of abdomen, if any thing, increased.

Pot. bitart. gr. x. Sp. Æther. Nitr. et Sp. Junip. āā \mathfrak{z} ss. ex. Infus. Scopar. t. d.

Repet. Pil.

17. Urine continues the same, not being increased in quantity : bowels confined.

P. Jalap. Co. ʒss. ċ. Pot. bitart. gr. xv. st. ; et P.

19. Urine still small in quantity, surcharged with lithates : bowels relieved freely.

Ft. Paracentesis abdominis.

20. About two gallons of clear greenish fluid were drawn off, with great relief to the distressing feeling of tension. This fluid was densely coagulable by heat ; and, after standing some time, there could be seen in it an arborescent appearance, resembling sea-weed floating in a rather dense fluid. When the abdomen was examined, after the fluid had been withdrawn, it was found that the liver occupied the whole of the epigastric region, and its edge was felt beneath the cartilage of the ninth rib on the left side. There was also a tumor to be felt some distance below the ribs on the right side, occupying a considerable portion of the umbilical region. The edge of this tumor felt thick and hard, and its surface rough. The abstraction of the fluid was followed by a good deal of spasmodic cough, which continued for a short time, but was relieved on the administration of a glass of wine.

21. Feels very comfortable, with the exception of a weight over the portion in which the liver was felt. His bowels have not been opened : has passed, if any thing, rather more urine.

Haust. Sennæ st. ; et P.

21st. 4 P. M. He complains of a cutting pain, with a good deal of tenderness around the point of tapping. He is troubled with hiccough : pulse 90, small and sharp : complains of thirst and loss of appetite.

Catpl. vulneri.—Cal. gr. ij. Opii. gr. i. nocte.

22. A great change in his aspect : he looks haggard and anxious : complains of no pain, but says he has passed a restless night : has been sick once : urine scanty and high-coloured : surface of body cold : abdomen painful on pressure, tympanitic : pulse 120, small, weak.—P.

23. Much worse : has vomited several times : breathing hurried : he appears to be sinking.

Hyd. Chlorid. gr. i. Opii. gr. ʒss. 4tis horis.

Jul. Ammon. ċ Spt. Ætheris Sulph. m xx. 4tis horis.

24. Is dying. He did not live out the day.

SECTIO CADAVERIS, eighteen hours after death.* — There was dark urine in the peritoneum; the omentum was contracted and ecchymosed, with copious films, and thin even coatings of softish fibrine; serous membranes mostly very tumid and injected.

Liver large, myristicated, lightish and yellow, firm, and rather uneven.

The right kidney nearly the size of four; its tissue dark and coarse; its tunic thick and firm (unequally so). The organ chiefly consisted of fungus, tubers, and masses, dark, dull, red, brown and yellow, mostly disorganized.

From six to eight inches of the ascending cava were filled by a mass two and a half inches wide, of a similar formation to that in the kidney, hæmatized, and entering the auricle. A similar structure, three inches by one and a quarter, extended down the right spermatic vein. The coats of the cava thick, but their contents curdy, inclined to become grumous, as were those of the right renal and capsular veins. The venæ cavæ hepaticæ contained grumous blood. Some veins, which appeared to be some of the venæ portæ, were filled with tough vascular jelly-looking tissue. (Plate IV.)

Left kidney rather dull and pale, but hypertrophic.

Heart ecchymosed and softish: right vena azygos near an inch wide: abdominal veins very large.

From the previous history of this case, we learn, that, four years before his death, and two-and-a-half before the appearance of any of the symptoms which could be ascribed to the remarkable organic disease found upon inspection, he was exposed to several circumstances liable to produce hepatic derangement; and we are told that at that time he actually became the subject of acute jaundice, and was troubled with dyspeptic feelings ever after. We accordingly find, that, independently of the morbid formation in the veins, the liver presented the appearance of slight degeneration, besides being myristicated, which I believe was the effect of the venous obstruction. The amount of degeneration here observed would not, I believe, have materially impeded the performance of the functions of the organ under favourable circumstances, as we frequently meet with as much in persons in whom there have been, during life, no evidence of any considerable derangement in the action of the liver; though I am not prepared to deny that

* From the Museum Inspection-Book.

it may not have favoured the development of the malignant growth. Whether the malignant growth commenced in the cava or in the kidney is also a question not easily determined; since we know that a fungoid growth may be formed in the latter organ, and advance to a great size, without producing any urinary derangement; of which an instance is recorded by Dr. Bright in the first series of these Reports.* It should be remembered, however, that there is no evidence of any renal derangement before he noticed the appearance of blood in his urine, which occurred a considerable time after the enlargement of the abdominal veins, which was, in all probability, produced by the obstruction in the ascending cava.

The ascites did not take place till more than a year after the enlargement of the superficial veins of the abdomen was first noticed; arising, probably, from the morbid growth not having till that time ascended sufficiently high up the cava to obstruct the *venæ cavæ hepaticæ*, and consequently impede the passage of the blood in the portal veins.

The almost perfect obliteration of the cava below the fungoid mass, and the great enlargement of the superficial and *azygos* veins, are also interesting features in this case, as shewing that veins, as well as arteries, adapt their size to the quantity of blood which they are required to convey; and also as demonstrating the free circuit of communication which exists between the ascending and descending *cavæ*. It is probable, too, that had the cava been obstructed, though ever so completely, only below the entrance of the *venæ cavæ hepaticæ*, none of the more serious consequences of venous obstruction would have ensued: as soon, however, as the obstruction reached the latter vessels, the blood in the porta having no other channel, engorgement of the liver and peritoneal effusion speedily followed.

The series of diseased action may then be stated thus: General derangement of the system from exposure and excesses, giving rise to dyspeptic symptoms, and probably some amount of chronic change in the liver; malignant growth in the interior of the ascending *cavæ*, obstructing the vein (and subsequently extending to the right kidney); obliteration of

* *Guy's Hospital Reports*, Vol. IV. p. 237.

the vein below the obstruction; enlargement of the superficial veins of the trunk, and of the vena azygos major, by which the blood was carried into the subclavian vein and descending cava; extension of the disease to the right kidney, giving rise to great enlargement of that organ, and perhaps to the occasional appearance of blood in the urine; extension of the disease up the cava, so as partially to close the orifices of the venæ cavæ hepaticæ, thereby giving rise to engorgement and myristication of the liver, and ascites: for this acites paracentesis was performed, in consequence of which, and the presence of malignant disease, as well as other conditions to be noticed hereafter, peritonitis supervened, of which the patient died.

As regards the diagnosis in this case, the history of the patient, the icteric tinge, the condition of the urine, and the manifest enlargement of the liver, all seemed to concur in suggesting the belief, that the ascites under which the patient was labouring was produced by chronic enlargement of the liver, accompanied, as is generally the case, with sufficient structural change to impede the portal circulation: and although the extraordinary enlargement of the superficial veins of the abdomen indicated a greater amount of pressure upon the ascending cava than we commonly find in such cases; still, as it is very conceivable that a great enlargement of the liver might produce an almost entire stoppage of the blood in that vessel, I gave it as my opinion in the last Clinical Lecture which I delivered previous to his being tapped, that he was suffering from obstruction both of the ascending cava and venæ cavæ hepaticæ, the result probably of an hepatic tumor; for at this time the quantity of fluid in the abdomen prevented our feeling the kidney. We were, indeed, in possession of information which might have led us to a more accurate diagnosis — I mean the statement of the patient that he had at one time passed blood in his urine; but to this I confess that I did not attach the importance it deserved: for, as I observed to the class, it is no very uncommon thing for patients to mistake the deep red colour sometimes given to urine by purpures for blood, and this is still more likely to happen if bile be likewise present, and if the urine be of small quantity, and

therefore, in all probability, considerably concentrated. Could we, indeed, have relied upon the fact of blood having been passed in the urine, and have ascertained the existence of a tumor in the region of the kidney, which we were enabled to do after the tapping, we might have found a cause for the obstruction of the cava, by supposing it pressed upon by a fungoid enlargement of the former organ; but beyond this our diagnosis must have been purely conjectural, neither could it have led to any practical result. The serum which was drawn off by paracentesis was more highly charged with albuminous matter than we commonly find in hepatic ascites. This was shewn by its spontaneous coagulation, and may, perhaps, have been dependent upon a greater or less amount of inflammatory action in the peritoneum before the tapping. The belief that such was the case induces me to suggest, that, in cases of ascites, of which the cause is obscure, or where we have reason to apprehend any disposition to peritonitis, it would be best, in the first place, to draw off a little of the fluid with a small trochar, in order to test its specific gravity; and that, if it appeared to be high, we should most carefully guard against the occurrence of peritonitis after the operation.

It has been already observed that the urine in this case was very scanty, and abounded in solid contents; and to this it may be added that diuretics similar to those which were found very efficacious in patients labouring under other forms of dropsy, were administered, without producing any marked increase in the quantity of the secretion. Neither can it be said that the fungoid disease in the right kidney was the cause of this deficiency, since the left was healthy; and we know that one kidney will often carry on the secretion of urine in a sufficient quantity for all the purposes of health: and besides this, we also know that fungoid growths generally proceed to a great size in the kidney, developing themselves to the interstitial structure without interfering with its efficiency as a secreting organ. The deficiency in the quantity of the urine, and the inefficacy of the diuretics, cannot, therefore, be in any way ascribed to the kidneys; and its cause is to be found, if I mistake not, in the obstruction to

the portal circulation, which prevented the fluid taken into the alimentary canal from finding its way into the system in sufficient quantity to hold in solution those soluble matters which are, in health, eliminated by the kidneys.

There did not occur amongst the patients under my care in the clinical wards last season a case of ascitis arising from induration of the liver; but such are so common, and must be so familiar to every practitioner, that it is hardly necessary for me to detail one in order to complete the series. Dr. Alison justly observes, that, "of these," (the special causes of ascites) "by far the most common is such disease of the liver, generally induration (often with enlargement, but sometimes with diminution of size), as obstructs the flow of blood through the *venæ portæ*." It is also notorious, that, in these cases, not only is the urine very scanty, but also there is always great difficulty, sometimes an absolute impossibility, in procuring the free secretion of urine by any means, which also occurred in the case last related (Case 4), and this where the kidneys have been found, after death, to be healthy. We see, then, that where the portal circulation is obstructed, whether in its extreme branches, as in the case of indurated liver, or at the orifices of the *venæ cavæ hepaticæ*, as in Case 4, the result is still the same as regards the urine; and it is, in all probability, owing to the difficulty which exists of necessity in procuring the action of diuretics in cases of induration of the liver that ascites is generally regarded as the most intractable form of dropsy. Thus Dr. Alison remarks, "It is an important practical observation, that ascites is less frequently removed by remedies than anasarca or even hydrothorax."

It is no objection to this argument, that, in cases of hepatic dropsy, the urine undergoes considerable changes in the character of its solid contents; for this is no more than we should expect, *à priori*, from the circumstance of so important a depurating organ as the liver being deranged, considered in connexion with that of the kidney possessing, to a certain extent, a supplementary action. The fact of the diminution in the quantity of the water remains the same; and as this fact is observed under circumstances which have nothing in common but the obstruction to the passage of the fluid from the

commencement of the small intestines through the portal system into the extreme circulation, we are, I think, justified in asserting, that obstruction to this passage, whether it exist in the commencement of the small intestines, as in Case 2; or in the extreme circulation in the liver, as in cases of ascites from induration of that organ; or in the orifices of the venæ cavæ hepaticæ, as in Case 4; is incompatible with abundant secretion of urine. We advance, then, a step in the proof of our proposition; and are enabled to state, that, "if a sufficient quantity of water cannot be received into the small intestines, or if the circuit through the venæ portæ, the liver, and the venæ cavæ hepaticæ, into the general circulation be obstructed, the due secretion of urine cannot be effected."

It may be said, that, in stating the facts which have been adduced in proof of the above proposition, the immediate absorption of fluids by the veins has been taken for granted; and that no attempt has been made to prove it. In reply to this I would remark, that the doing so would belong to an *à priori* argument in favour of my proposition, and not to the demonstrative, or rather experimental evidence by which I have been endeavouring to establish it. And secondly, that the evidence of venous absorption is to be found in all modern works on physiology. And thirdly, that I believe those who advocate the doctrine of absorption by the lymphatics do not deny that some amount of fluid finds its way directly into the blood; and that in the case of the intestinal capillaries which converge to form the branches of the portal trunk, it must, of a physical necessity, happen, that when a considerable quantity of fluid of less density than the blood is exposed to the mucous surface on which these capillaries ramify, that fluid must pass into them by endosmosis. And lastly, that if the observations which I have related, as well as the inferences that have been drawn from them, are correct, then absorption by the venous capillaries of the intestines follows as a matter of course.

The above proposition being considered to be established, several corollaries, which admit of some practical application, appear to follow immediately from it.

COR. 1. Since it has been shewn that if a quantity of water

cannot be received into the intestines the due secretion of urine cannot be effected, it must necessarily follow, that if an excessive quantity be exhaled from the surface of the intestine the same result must ensue.

Let us now put this to the test of experience. The most notable instance of excessive exhalation from the muco-intestinal membrane is that furnished by the epidemic cholera. Now, in this remarkable disease, one of the most striking symptoms was the deficiency in the quantity of the urine. I remember myself to have seen a case in which no urine was voided for eight-and-forty hours before death, and where, upon inspection after death, the bladder was completely empty; and Dr. Watson states, in his Lectures, "One man who was under my own observation and care, and who recovered, did not void a drop of water from Sunday morning till the afternoon of the following Wednesday."

COR. 2. In those cases of ascites which depend upon induration of the liver, diuretics will be ineffective in proportion as the degeneration is more advanced.

The observation which has been already quoted from the admirable work of Dr. Alison, as well as the experience of every practitioner, will bear me out in stating, that, in a considerable number of cases of this kind, diuretics, however judiciously combined, are utterly powerless; and in such cases we often find, upon inspection after death, that the liver is in the extreme stage of what is commonly known as the "hob-nail" degeneration; for in these cases the chronic thickening of the cellular tissue (which, being a continuation of Glisson's capsule, accompanies the vessels which enter the liver, and the biliary ducts) has been succeeded by contraction.

In those cases, however, in which the degeneration of the liver is less advanced—as, for instance, in the chronic enlargement—and has not given place to contraction, diuresis may frequently be induced, and the removal of the fluid promoted by its means. In order, however, to effect this, we must endeavour, in the first place, to relieve the portal circulation. With this view we should endeavour to unload the intestinal capillaries, which are, in fact, the origins of the portal veins, and, at the same time, assist the circulation in the liver, by

exciting the secretion of bile. The first object, then, where there is no irritability of the bowels to contra-indicate it, should be to procure loose evacuations by hydrogogue cathartics. This is no new rule of practice; but its general adoption, as well as the remark of most observant practitioners, that diuretics very often act after moderate purging in cases where they had been powerless before, affords strong confirmation of the correctness of the view which I am advocating. The secretion of bile will, I think, be better excited, under such circumstances as we are now considering, by stimulating the intestines into which the bile is to be poured, than by those means which are supposed to act as more direct stimulants to the liver; and I believe that, in cases of retention or suppression of the secretion of the liver, the rule which I have before laid down* of endeavouring to promote any secretion or evacuation which is obstinately suppressed, by stimulating the part into which it is to be poured, is particularly applicable. Whether, indeed, the chologogue action of mercury be solely direct upon the liver, or whether it act also by exciting the action of the intestinal canal, may to some appear doubtful, though I believe, myself, that it has this two-fold action: but as the former mode of operation is but little doubted, it ought to be used with great caution, and its effects carefully watched; for if it excite the secretion of bile whilst its excretion is obstructed, there will be great danger of setting up inflammation in the ducts themselves. There is also, as it appears to me, another objection to the very free exhibition of mercury in cases of ascites from chronic induration of the liver; which is this—that as mercury is, to a certain extent, a direct stimulus to the liver, and as the disease in question is primarily a chronic inflammation of that viscus, there may be a danger of increasing, by its use, the primary disease, although we may palliate some of the consequences of that disease. Still there can be no doubt that if the possible dangers attendant upon its use be borne in mind, it may be very serviceable as an adjuvant in relieving the portal circulation by promoting the secretion of bile. The keeping up a moderately full action of the whole track

* P. 293.

of the intestines will be another important means to this end ; and for this purpose I believe that gentle aloëtic preparations—as the compound decoction of aloës with the extract of taraxacum, or, in cases in which the decoction of aloës might be supposed to be too stimulating, a small quantity of compound extract of colocynth with a little blue-pill and ipecacuanha or tartar emetic may be employed, and the taraxacum given in a mixture with a little alkaline carbonate. When we can thus relieve the portal system by unloading it (if I may be allowed the expression) at its two extremities—that is, by exciting free exhalation of fluid for the mucous membrane of the small intestines, and at the same time promoting the secretion of bile, we shall find that diuretics will afterwards act with much greater efficacy. Taraxacum is, I am aware, often considered as a direct diuretic; and that it often increases the flow of urine there can be no doubt: but I believe that its diuretic action is for the most part mediate; that by stimulating the duodenum it promotes the flow of bile; and thus, by facilitating the absorption of fluid into the portal system, and, through it, into the general circulation, it increases the quantity of the urine. Mercury is said to determine the action of squills to the kidneys: may it not be more properly said that it promotes its diuretic action mediately, by facilitating absorption through the *venæ portæ*?

Having now adduced instances of obstruction to the reception of fluid into the general circulation, whether that obstruction takes place in the *primæ viæ*, the liver, or the orifice of the *venæ cavæ hepaticæ*, and observed, that, notwithstanding the different forms of disease in which this obstruction was presented to us, there were certain constant effects common to all, we may perhaps be allowed to state certain physiological and pathological conclusions, which appear almost immediately deducible from the facts which have been stated.

The water received into the stomach, with such soluble matters contained in it as are not decomposed in the *primæ viæ*, is taken up by the capillary branches of the *vena porta*, carried onwards with the blood through the portal trunk, and again dispersed; through the ramifications of that vein in the liver. Here the blood again parts with a portion of its water, in order

to form the solvent for the solid contents of the bile. Passing onwards through the pulmonary and systemic circulation, the redundant water of the blood carries with it those soluble matters which it contained at first, and receives, or rather acts as a solvent to, those products of the transformation of tissues which must be carried out of the system. Holding these in solution, it is carried on with the current of the blood (furnishing in its way the water requisite for various secretions, many of which play an important part in the different vital functions) to the great excretory organs, the skin, the liver, and the kidneys, where it passes out of the system, carrying with it, in solution, through each of these organs, the matters which that organ is more expressly designed to eliminate, *but which cannot be separated unless they be brought to it in solution.* The soluble matters taken into the system with the water pass out, for the most part, by the kidneys, and act as stimulants to those organs. We see, then, one important part which water performs in the animal frame: and as a due supply of atmospheric air, and its free access to the air cells of the lungs, is necessary, in order to remove the carbonic acid, which is the result of the slow combustion of carbon by which animal heat is maintained, and which acts as a poison if retained in the system; so is the due supply of water, and its free passage through the course which we have been describing, necessary to the removal from the system of those lower organic products, which are the results of the continual transformation of tissues necessary to the maintenance of life and health of the body, but which prove deadly poisons if they are not quickly expelled from the system;—whilst the soluble saline matters which are taken into the system with the ingesta, and which undergo no change in passing through it, besides other purposes, are finally of service in acting as stimulants to those most important depurating organs, the kidneys.

Let us now see how far these considerations are applicable to the explanation of the etiology of some of the phenomena in cases such as those of which we have been treating.

In Case 1. there was no obstruction to the passage of fluid into the small intestines; and the viscera generally, with the

exception of the twisted bowel, being sound, the functions of the skin, the liver, and the kidneys, were well performed.

In Case 2. there could be scarcely any water taken into the system, owing to the obstruction being situated so high in the intestines, and the speedy rejection of almost every thing that was taken into the stomach; and here we find that the secretion of urine was entirely suppressed for five days; and as there were no evacuations, and no bilious vomiting (at least after he was admitted into the ward), there must likewise have been a very scanty secretion of bile. But this was not all; for in addition to the symptoms more immediately referable to the disease of the intestine, he presented some of those which are observed in connection with retained secretion. He had, notwithstanding occasional paroxysms of pain, a quiet stupor without any delirium, which is one of the most characteristic forms of the cerebral affection consequent upon the non-excretion of the solid contents of the urine. He had also severe cramps. Now I do not mean to assert that these latter were in no way connected with the intestinal irritation; but it is a fact that spasmodic affections, and more particularly cramps of the legs, are frequently observed in those who are the subjects of Bright's disease of the kidney.

It may not be uninteresting to compare this case with the epidemic cholera, in which so great a quantity of fluid was rapidly carried out of the system from the mucous surface of the intestines. In that remarkable disease, not only is there suppression of the secretion of urine, but that of bile is arrested likewise: in it, also, are there violent cramps; and in it is there, in a greater degree, the blue tint of the skin which was noticed in Case 2: in it urea was detected in the blood, by others as well as by myself. It would appear, indeed, that, amongst the other conditions of this mysterious disease, there is, owing to so great a quantity of fluid being carried out of the system by stool, a want of water in the blood to carry out in solution those substances which should be eliminated by the liver and the kidneys, and which are consequently retained in the system, and there act as poisons. In this disease, too, there is a great tendency to coma or stupor without delirium.

In those cases in which the portal circulation is impeded

by induration of the liver there cannot be so complete an obstruction to it as entirely to close the communication between the extreme vessels in the small intestines, and the *venæ cavæ hepaticæ*; since it is apparent, from what we have already seen, that life could not be continued many days under such circumstances. We find, however, that, owing to the amount of obstruction which does exist, there is a great diminution in the quantity of the urine, and not unfrequently a deficiency of bile. There is not, therefore, in most of these cases, such an impediment as to prevent a sufficient quantity of fluid being taken into the system to hold in solution the substances which are ordinarily excreted by the urine; and accordingly that fluid is of high specific gravity, shewing an increase in the proportion of those solid contents nearly proportionate to the diminution in the quantity of the water. We generally find, too, that the fluid poured into the peritoneum is little more than water and salts, shewing the passive nature of the effusion.

In the more advanced cases, however, the passage through the liver is sufficiently closed to prevent the absorption into the circulation of those substances which, when carried to the kidneys, act as diuretics, and consequently to render futile all medicines administered for that purpose. It may too, and I believe sometimes does happen, that the absorption of fluid is so far prevented that there is not enough to carry out of the system the urea and other matters which should be excreted, and which, remaining, cause a tendency to serous inflammation, which manifests itself after the operation of tapping. This had probably occurred in Case 4, where there was very great obstruction to the passage from the portal into the general circulation, and where urine was remarkably scanty. In this case, however, the obstruction was beyond the liver; and consequently there was no greater diminution in the quantity of bile than could be explained by the disease in the substance of the liver.

I have now traced the effects of obstruction as far as the general circulation,—to the entrances, in fact, of the right auricle of the heart; and I have by me records of cases which occurred under my care in the clinical wards, which illustrate the effects of obstruction to the circulation in the

right heart, the lungs, the left heart, and the great vessels. These, however, which are necessary to the demonstration of the latter clause of my proposition I reserve for our next Number.

This humble commencement of a course of inductive medicine I hope to continue through several successive Numbers, relying upon the ample resources of our clinical wards.

APPENDIX TO DR. BARLOW'S PAPER.

CASE OF NARROWING OF THE
UPPER PART OF THE SMALL INTESTINES,
WITH DIMINISHED SECRETION OF URINE.

Communicated by DR. LEVER.

Mrs. P.—, aged 51, the mother of a large family, desired my advice about twelve months since. Her symptoms resembled those that accompany the passage of biliary calculi—excessive pain in the region of the gall ducts, coming on in paroxysms, jaundice, sickness, urine scanty and high-coloured, bowels constipated, &c. The treatment consisted in allaying inflammation by local depletion, the administration of calomel and opium, castor-oil, and the repeated injection of enemata. After some little time her symptoms were removed, with the exception of the tinge, which she never lost.

Between this period and the time of the fatal attack the state of her bowels occasioned her a great deal of anxiety, never acting, unless under the influence of some aperient. Great care also was necessary in taking food; for if the stomach were overloaded, it forthwith rejected its contents; but if she took a small quantity of aliment, sickness did not follow.

On Monday, August 5th, I was requested to see her: she was in excessive pain, chiefly confined to the region of the gall bladder; and although never free from suffering, yet the pains were increased at intervals: the sickness was almost unceasing, consisting of large quantities of macerated and undigested food, some of which was recognised to have been swallowed at supper on the Friday evening. The yellow tinge of the surface was extreme; the bowels had acted but sparingly, the motion of a high colour and loose; the urine was high-coloured and scanty, and its daily quantity, during her illness, did not amount to more than six or eight ounces; and

for the last forty-eight hours of her illness none was evacuated. The treatment consisted in local depletion, and the administration of calomel and opium, and the use of enemata.

General depletion was never indicated: the state of the pulse was not such as to warrant the abstraction of blood from the arm. The sickness continued unceasingly and most distressing up to the period of her decease. The quantity evacuated from the stomach was immense: its colour was dark brown, and its smell highly offensive. The bowels were not relieved after the second day of her illness. A small quantity of light-coloured fæculent matter came away with the injected fluid on that day. On two occasions a long elastic tube was passed, although with some difficulty. There was no tympanitic distention of the abdomen. Collapse came on rather quickly, and she died whilst sitting on the night-stool, feeling an irresistible desire to relieve the bowels.

On post-mortem examination—

Abdomen had become distended from commencing putrefaction.

Liver large, dark-coloured, and highly congested. No trace of gall-bladder, but the duodeno-pyloric extremity of stomach, liver, and head of pancreas, were adherent on closer examination. The pyloric orifice of the stomach was found to be very much reduced in size from the thickened state of the coats, and from the deposition which had taken place between the coats themselves. A similar change had been effected in the inferior and middle third of the duodenum, which had so far reduced the cavity of this intestine that a common quill could not be passed. The lower third of the duodenum became gradually larger; and the jejunum and ileum were of their normal size. The cæcum and ascending colon were smaller than natural, but presented the characterizing appearances of large intestines; but these were altogether wanting in the transverse descending colon and rectum. The long intestinal bands were scarcely visible, and the cavity was so contracted as scarcely to admit the passage of the fore-finger. About the centre of the ileum a biliary calculus of the size of a walnut was found, partially sacculated, but yet moveable.

The *Spleen* was of natural size, and healthy.

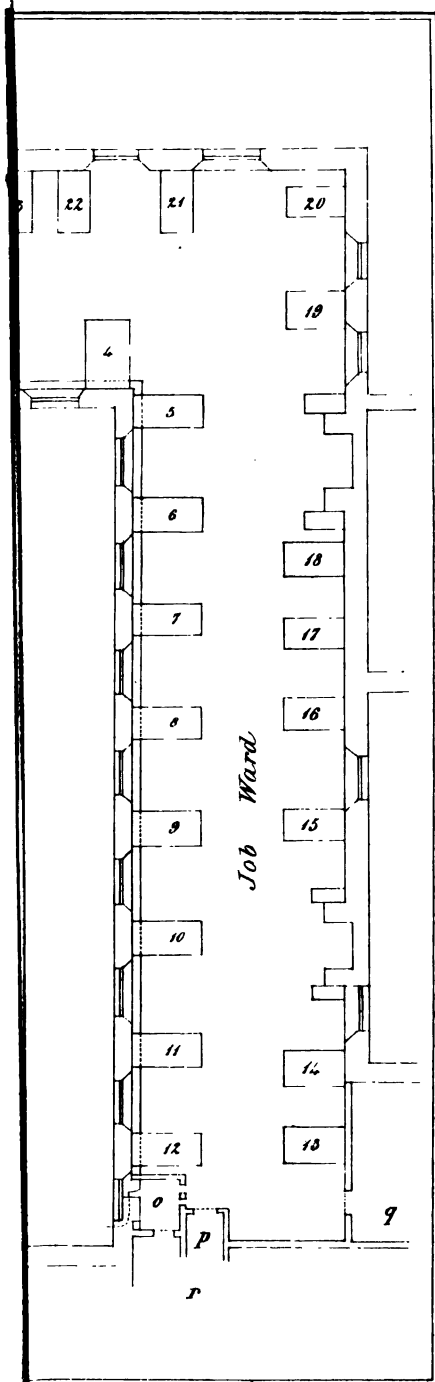
The *Pancreas* was large, firm, and of normal colour.

The *Kidneys* healthy.

The *Uterus* and *Ovaries* free from disease.

The *Bladder* empty.

There is one symptom attending intussusception in *infants* which is not generally noted, but which I have *uniformly* found, viz. *scanty*, or, more frequently, *absence of secretion* of *urine*.



M. & V. Hancock, Lith. Printers.

PLATE II.

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Fig. 1.

Sigmoid colon in the case of George J——. (Case 1. p. 371.)

- a.* Descending colon.
- b.* Rectum.
- c d.* Distended knuckle of intestine.
- e f.* Seats of obstruction.
- h.* Point where perforation took place.

Fig. 2.

Duodenum, jejunum, and upper part of the ileum, in the case of Joseph H——. (Case 2. p. 378.)

- a.* Seat of first obstruction.
- b.* Seat of second obstruction, caused by adhesion of the jejunum to the duodenum.
- c.* Seat of lowest obstruction, caused by the ileum passing behind the band of the false membrane.

FIG. 1.

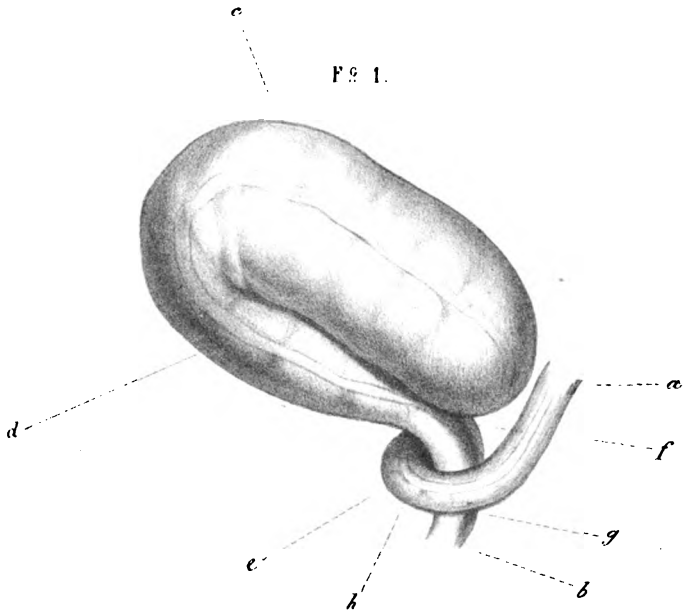


FIG. 2.

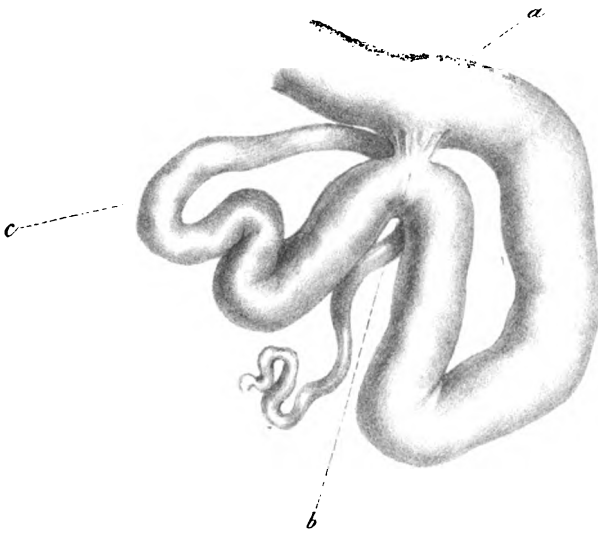


PLATE III.

Diagrams shewing the probable progress of the distention and distortion of the descending colon, in Case 1. (See p. 371.)

Fig 1.

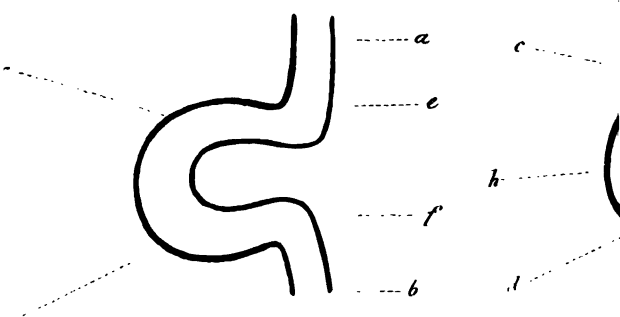


Fig 3

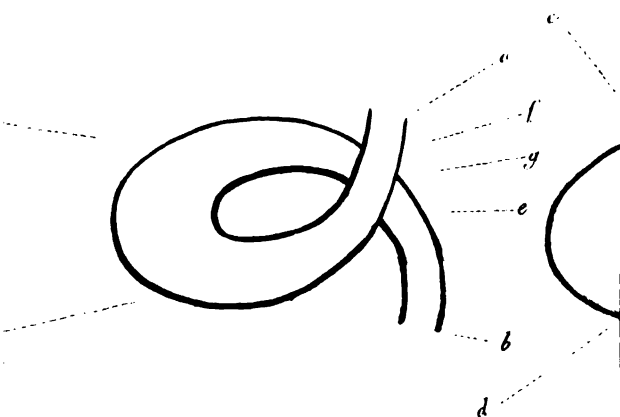
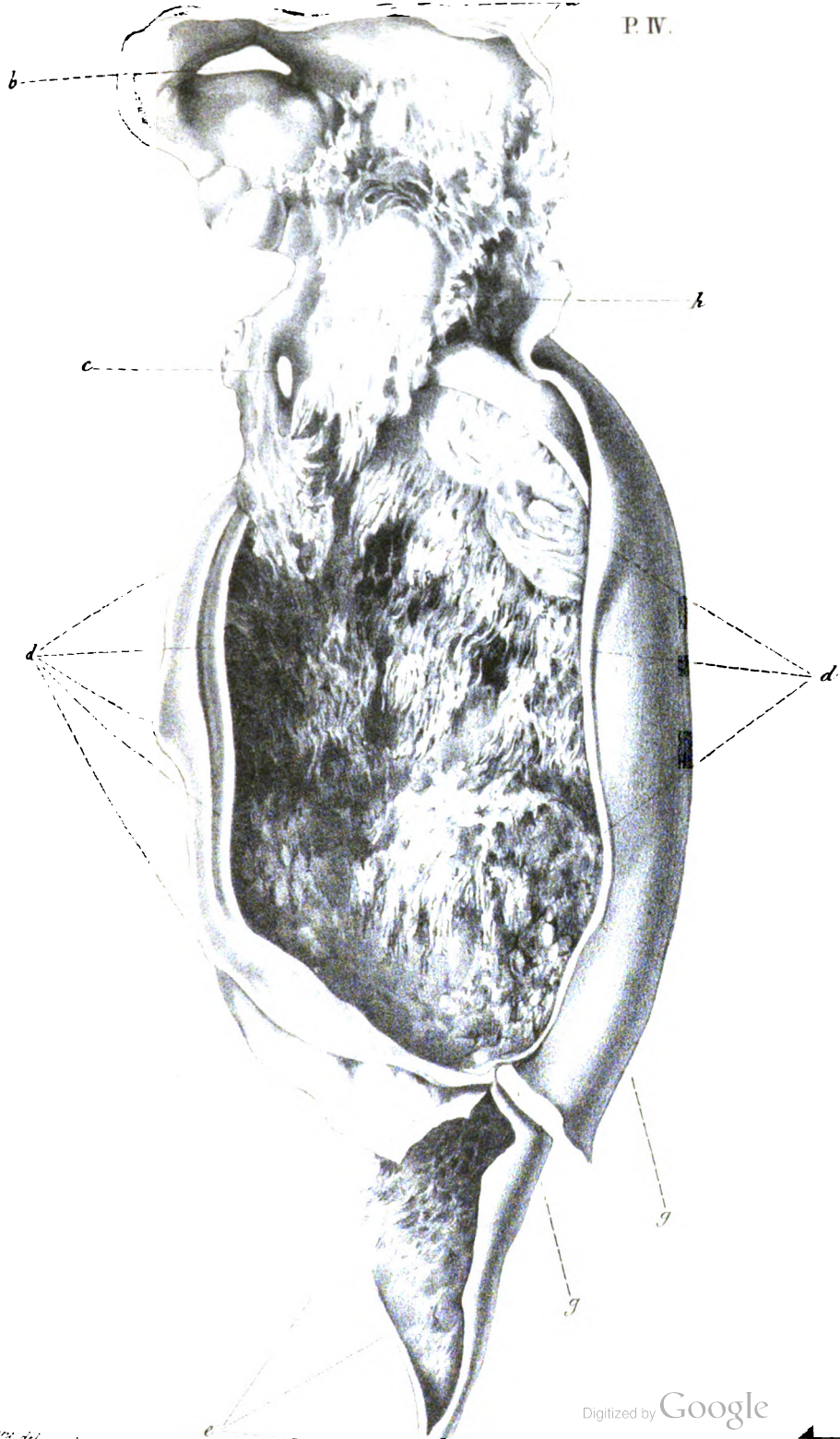


PLATE IV.

View of the upper part of the ascending cava, in the case of Henry S——. (Case 4. p. 398.)

- a.* Right auricle.
- b.* Opening of cava descendens.
- c.* Orifice of vena cava hepatica.
- d.* Thickened tunics of cava, divided or split.
- e.* Commencement of spermatic vein, distended with a mass of fungoid disease.
- g g.* Lines shewing the natural width of the cava. Between them is seen the fusiform extremity of the vessel, the part below being nearly obliterated as far as the bifurcation.
- h.* Mass of fungoid disease partially closing the orifice of the vena cava hepatica.



MEDICAL REPORTS

FROM

THE BOOKS OF THE CLINICAL WARDS.

WITH REMARKS

BY J. C. BRERETON.

CASE 1.

Fever—Bronchitis—Pneumonia—Pleurisy.

TIMOTHY C——, aged 36: ill five days: admitted November 8th into 24 Job Ward, under the care of Dr. Addison: a hackney-coachman; temperate; always robust. Five days back had violent rigors, *preceded for three or four days by head-ache, of which he took no notice.* These rigors were quickly followed by great pain in back and loins, with vomiting; and on the following day by *lancinating pain in the chest*, extending from sternum to spine, accompanied by cough, and some expectoration, *said to have been bloody.* Medicine was administered, but without benefit, as violent delirium, accompanied by screaming, soon supervened. On the third day from the attack his head was shaved, which seems to have slightly checked the delirium and head-ache.

Present condition.—Countenance flushed, distressed: eyes suffused: heat of scalp considerable: pulse 110, soft, compressible: speech indistinct, inability to utter certain words: some incoherence: tongue foul, moist: cough troublesome: expectoration viscid, streaked with blood: pain in chest *only on coughing*: great pain in head, chiefly across the vertex, intensely aggravated on coughing: cutaneous surface generally moderately hot and dry: mucous râles over the whole chest: resonance good: bowels rather confined: urine diminished, high-coloured, scalding.

Emp. Lyttæ sterno.

Calom. gr. iij. st.—Ol. Ricini ʒss. post horas iv.

P. Ant. Opiat. Mit. c̄ Calom. gr. iiss. quartis horis.

The report on the following day is somewhat better, as he had dozed during the night, and the cough had been less troublesome: the pain in back, chest, and loins much relieved: speech, though still impeded, yet somewhat improved: bowels had been freely acted on; dejections dark, foetid; and he expressed himself better; but on the

other hand, he *now* complained of a pain in the *left hypochondrium*. The tongue was covered with yellow sordes; lips parched: languor great: constant twitchings of eyebrows: pulse 120, feeble: mucous râles general: respiration frequent, distressed.

Pergat.

The next day's report still more favourable: a quiet night, although without sleep: cough less: expectoration still streaked with blood, but less viscid: speech improving: respiration easier: pains all nearly gone: face still flushed, *nose particularly so*: tongue more moist, and thirst less: pulse 110, *fuller*: bowels not opened since yesterday morning: urine in good quantity, less high-coloured: skin comfortable: physical signs of chest as before.

Ol. Ricini.—Pergat.—Arrow-root.

11th, three days from admission. Between 3 and 4 A.M. of this day, after a violent fit of *coughing*, he brought up a quantity of *florid blood*, with immediate relief to all his symptoms: he is now quite easy, excepting some pain in left side on moving or breathing. In every other respect the symptoms are more favourable. There is some cre-pitation of fine pneumonic character at left base posteriorly; but the tubes generally are clearer.

Empl. Lyttæ lateri sinist.—P.

12th. Excepting the pain alluded to, his condition is much improved: expectoration is now only *frothy mucus*, slightly streaked with blood: the gums are touched: a herpetic eruption has appeared on the lower lip.

Omittantur Pilulæ; et Pergat.

13th. Still more favourable: pulse 96, compressible: skin moist, perspiring: tongue cleaning. There is, however, dulness on the left side posteriorly, with tubular respiration: in the opposite lung mucocrepitation: both free anteriorly: slight pain in left side on coughing.

C. C. lateri dolent.—Repet Pil. sing. noct.—J. A. A.

14th. After the abstraction of eight ounces of blood he felt faint: the pulse became quickened. He has passed a good night, but feels to-day very low.

J. A. A.—Beef-tea.—Arrow-root.

From this period convalescence may be said fairly to have set in, as all the more unfavourable symptoms daily decreased; the cough, accompanied by frothy mucous expectoration, *untinged by blood*, continuing longest, and producing some slight pain in the old spot. His bowels, too, latterly had a strong tendency to disease, evinced by pain in the lower bowel, and frequent desire to go to stool. The mildest measures were adopted, care being taken to support his powers.

As the tubular respiration did not subside, a blister was, on the 18th, applied; and on the 21st, *thirteen* days from admission, and *eighteen* from attack, he was ordered a chop, and allowed to sit up.

He steadily improved, and, 8th December, was discharged, the left lung being still unsound. The report runs "respiration tubular at base of left lung posteriorly: *it is far away, and very indistinct.*"

CASE 2.

Fever—Bronchitis—Hysteria.

MARY ANNE S —, aged 22: ill one week: admitted December 1st into 11 Lydia Ward, under the care of Dr. Addison: a servant of all-work, subject to cough, and never robust. Menstruation irregular. One week since was seized with head-ache, giddiness, nausea, and general pains, followed by cough of an exceedingly severe and spasmodic character.

Present condition.—Face much flushed: vessels of thorax and neck turgid: skin hot: apices of lungs puerile: bronchial râles elsewhere general; *large tubes principally involved*: much cough: dyspnœa: expectoration scanty, of light yellow colour: pulse 100, splashing: tongue of dingy redness at tip and edges; thick yellow fur at base: bowels open: urine in good quantity.

P. Rhæi. c̄ Calom. ʒi st.

J. A. A. c̄ Tinct. Hyoscyam. et V. A. Pot. Tart. m xx. 4tis horis.

2d. No improvement: the violent spasmodic cough continues unrelieved: the skin of the face and thorax is of so bright a scarlet colour, combined with sore throat, as to induce a suspicion of scarlet fever.

Empl. Canth. sterno.—P.

The following reports are more favourable; the most urgent symptoms being the dyspnœa and spasmodic cough: the suspicious colour of skin had disappeared.

4th. She was ordered, in addition to the mixture,

P. Conii c̄ Ipec. gr. v. P. Hydrarg. gr. i. bis quotid.

The report of the day following (5th) is less favourable: violent diarrhœa, fæces expelled at every attempt at coughing: dyspnœa extreme: head-ache violent: respirations 45: pulse 125, full, but compressible: cheeks purple: lips dry: symptoms of prostration: *the smaller tubes are now involved.*

Pulv. Ipec. Co. gr. iij. c̄ P. Ipec. gr. i. Hydr. c̄ Creta gr. ii. 6tis horis.

Mist. Amygdal. c̄. Syrup. Tolut. ʒi. et Tinct. Camph. Co. m xv. ter quotidie.

No improvement: pulse at times, during the spasmodic attacks, almost countless. She is occasionally quiet, when all the unpleasant symptoms are much mitigated: the blister has been repeated, and (5th) she is ordered a little wine. On the following day the report is more favourable; her urgent symptoms are relieved; she has had some sleep, and the diarrhoea has ceased.

7th. No material alteration: the same spasmodic attacks are frequently recurring with frightful symptoms: dyspnoea almost to suffocation: pulse scarcely to be counted: respiration 50; bronchial tubes are very much loaded, and the prostration is rather on the increase.

8th. *Delirium* of a low muttering type has set in since eight last evening, and she is decidedly more prostrate to-day: face pale: motions passed in bed: some slight twitchings of fingers and muscles of face.

Omit. Pil.

Infus. Serpent. et Decoct. Seneg. part. æqual. c̄ Tinct. Serpent. ʒi. et Ammon. Carb. gr. iv. 3tis horis.

Wine frequently.

9th. Rallied somewhat yesterday evening; but at two this morning all her unfavourable symptoms became so violently aggravated, that it was feared she would sink under them. She is now perfectly insensible, and quite unable to expectorate, although the tubes are loaded. The wine has been freely administered in small quantities, and has roused her, tranquillising all the untoward symptoms, but only for a few minutes. 9 A.M. Diarrhoea has returned: pulse 120: respirations 40: left cheek flushed; right pale.

Enema Amyli. c̄ Tinct. Opii ʒss. st.—M. Cretæ.

10th. A worse night than the last: pulse a mere trembling beneath the fingers: all bad symptoms aggravated; and for the first time there was a *peculiar cadaverous smell*: wine and beef-tea strictly persisted in, and with the same results.

11th. Better all yesterday, and the improvement continues to-day. This favourable state continued until the evening of the 12th; when symptoms of prostration again recurred, and the peculiar smell returned. Now (13th) typhoid symptoms are on the increase: bowels opened twice in bed: pulse rapid, feeble: cadaverous smell very strongly marked: she lies insensible, but can be aroused: low delirium.

Empl. Lyttæ in quartam horam sterno applicetur.

Enema Amyli c̄ Opio.—Wine ʒxvii. daily.

14th. In this alarming condition she continued the remainder of yesterday and last night: at noon to-day she had again rallied. Up

to the 18th a series of favourable reports: powers greater: cough less: delirium gone: skin warm, perspirable. No change was made in the plan of treatment until the 18th, when some febrile excitement occurred, accompanied by delirium, and her *wine* was *decreased*, and *beef-tea increased*, which completely relieved all the symptoms. She however continued in the same variable condition, some days seeming to progress most favourably; on others, threatened with an outbreak of all her more serious symptoms. The wine was gradually diminished, and a blister occasionally applied, care being taken to keep the bowels in check; and by the end of the month she was nearly convalescent, although still extremely weak.

CASE 3.

Fever—Bronchitis.

MARGARET M——, aged 20: ill four days: admitted January 8th into 12 Lydia Ward, under the care of Dr. Babington: a lint-maker, residing in Bermondsey: of indifferent health, subject to winter cough. Catamenia occur every three weeks: is troubled with palpitation. Four days ago, while at work, was seized with the common primary symptoms of fever.

Present condition.—Head-ache considerable: face pallid, heavy: eyes suffused: tongue pale, slight white fur, and the usual symptoms of fever.

Thorax arched backwards, with convexity of spine to the right side: percussion gives a fair sound: peurile breathing: slight mucous râles: heart heard at right apex.

J. A. A. et Infus. Serpent. part. æq. Hyd. ċ Creta gr. iij. st.

Ol. Ricin. ℥ss. post horas iv.

10th. Better: febrile symptoms improved: cough remains.

Linct. Pot. Nitr. ℥i. Tinct. Opii m iij. h. s.

Went on improving, and was discharged quite well on 22d.

CASE 4.

Fever—Influenza—Ileitis—Phlebitis.

WILLIAM F——, aged 23: ill five days: admitted December 2d into 8 Job Ward, under the care of Dr. Addison: a day-policeman; temperate, healthy. *Five days* back, while on duty, felt pain and stiffness about the neck, followed, next day, by general weariness: this was succeeded by severe purging and nausea, which have continued to present time.

Present condition.—Languor excessive: head-ache: nausea: weight and fulness about chest and scrobiculus cordis: skin very hot and

dry: tongue furred, *dry*, red at tip, *edges*, and centre: mouth parched: countenance *flushed*: eyes suffused: bowels relaxed: no pain of abdomen: respiration natural: pulse 90, rather full and hard: thorax, sound.

Jul. Menth. \bar{c} Sod. Sesquicarb. ter quotid.—Rad. caput.

4th. Weaker: bowels moved twice, motions dark, bilious: expectoration of viscid, discoloured mucus, *unaccompanied by cough*.

J. A. A. \bar{c} V. A. P. T. m xv. 4tis horis.

More prostration: delirium has set in, and a few maculae have appeared: bowels continue relaxed.

Jul. Menth. \bar{c} Sod.

The same unfavourable reports continue: increasing prostration diarrhoea, delirium, &c.; but *no actual pain*. On the 8th he was ordered

Infus. Serpent. ter quot.

Ext. Conii gr. v. nocte manequ.

Beef-tea.—Arrow-root.

Up to 13th no improvement. The discoloured mucous expectoration continued, *still unaccompanied by cough*: he scarce had power sufficient to expel the mucus. All the unfavourable symptoms are progressing. Chalk mixture has slightly checked the bowels, but they cannot be thoroughly quieted. To-day (13th) he complains of pain in *right side*, just below the false ribs, increased on pressure and inspiration. There is a slight cough *now and then*.

Empl. Lyttæ lateri dolent.—P.

14th. No relief from blister: unfavourable symptoms unmitigated.

P. Ant. Opiat. mit. \bar{c} Calom. gr. i. 4tis horis.

Omit all stimulants.

15th. No improvement: pain extends somewhat higher up the chest; it is not, however, *acute*: cough now more troublesome: expectoration rusty, viscid, *streaked with blood*: there is a miliary eruption on the body: bowels somewhat better.

J. A. A. 4tis horis.

16th. Vomiting of bilious matter: tongue cleaner: cough less. In other respects as before.

Two following reports still cheering, as the tongue was cleansing, and the symptoms of prostration were less. Pulse had fallen from 109 to 90; but the pain, cough, and expectoration remained as before. He was again ordered

P. Ant. Opiat. fort. \bar{c} Calom. gr. i. 6tis horis.

The following day the report is again favourable;—*he has perspired*

freely for the first time : but the next shews a retrogression ;—cough very troublesome : pain in side sharp on coughing : pain *has appeared under the left scapula, increased by motion*, but not by coughing or deep inspiration : bowels open.—Pergat.

21st, 22d. Again favourable : pains less : bowels tranquil : vomiting of bilious matter on 21st.—Omit every thing.

24th. Improving : expectoration frothy : some pain in the side : some appetite.

Empl. Lyttæ lateri dext.

From this period to the 1st of January, *twenty-nine days from admission, and thirty-four from attack*, he had progressed slowly but favourably : pain in the side had left : bowels had been tranquil : tongue clean, moist : cough and frothy mucous expectoration variable ; sometimes absent, sometimes troublesome : the bowels, too, were obliged to be carefully watched. On the evening of the 1st, however, he complained of great general uneasiness, and return of the pain in the left side : countenance flushed : heat of surface : great head-ache : tongue dry : thirst : pulse 112, not very compressible : slight muco-crepitation posteriorly, with dulness and diminished respiration below scapula on right side.

P. Ant. Opiat. fort. c̄ Calom. gr. ij. 6tis horis.

J. A. A. 6tis horis.

Up to the 4th but little change : vomiting occasional : bowels *now* confined : pain somewhat less : in other respects as before. The pills were yesterday omitted : *to-day* (4th) conjunctivæ slightly tinged : pain and stiffness in left thigh : leg now very cedematous and tender : no swelling in groin.

Mist. Salin. c̄ V. A. P. T. 3fs. quartis horis.

Hyd. Chlorid. gr. iij. Ext. Conii. gr. iv. nocte manequē.

From this date a series of highly unfavourable reports : vomiting of bilious matter, and of every thing that he took : great relaxation of bowels, unchecked by chalk mixture &c. : motions bilious : pulse 120, creeping, thready : tongue foul : thirst : restlessness : some pain in right hypochondrium : leg the same.

On 5th the V. A. P. T. was omitted, and Tinct. Opii. m iv. substituted ; but the report of the 7th is still unfavourable : nothing could check the diarrhoea ; prostration is advancing ; and he now complains of pain in *left groin* : there is a great tenderness and hardness in the glands and in the course of the vein for several inches below Poupart's ligament : the leg and foot as before.

Fomentations and Poultrices.—Mixture and Pills to be continued.

8th. Slight improvement : bowels moved only once : vomiting of

bilious matter continues, but medicine retained: pulse 100, undulating: in other respects as before.

Omit. Omnia.

Plumb. Acet. gr. ii. Opii gr. ss. ter quotidie.

J. Menth. c̄ Sod. Sesquicarb. horis intermediis.

9th. Worse: bowels again relaxed: vomiting increased: medicine rejected: in other respects as before.

10th. A little more favourable, as vomiting has ceased: bowels opened thrice, motions fæculent: there is, however, much soreness in abdomen on pressure or coughing: pulse 112.

12th. Vomiting has ceased for three days, and the bowels are quieter: tongue, pulse, and general appearance, do not improve: there is much pain in upper part of thigh, with tenderness in the course of the superficial vein.

Hirud. viij. part. affect.; et Pergat.

13th. Violent rigors and profuse perspiration: great pain on motion in the fore-part of the thigh: vomiting as violent as ever: collapse approaching: jaundiced tint has continued.

Add. sing. dos. Mist. Carb. Ammon. gr. iv.

Next two reports equally disheartening: scarcely a symptom relieved.

On 15th, vomiting ceased: bowels relaxed in spite of chalk, opium, &c.: *cough again troublesome*: swelling and hardness of leg and thigh diminished: appetite somewhat improved.

Enema Amyli c̄ Tinct. Opii 3fs vesperi; et Pergat.

18th. No improvement. To-day *the old pain in left scapula* has returned.

Hyd. c̄ Creta gr. ii. P. Cretæ Co. gr. vi. nocte maneque; et Pergat.

From this date no report of the case has been made, but I recollect that the man experienced several relapses of the same character; that his convalescence was remarkably slow; and that it required the utmost care to recruit his strength without lighting-up a new inflammatory action. I have seen him lately at his employment—a day-policeman: he looks well, and says he feels well. All symptoms of thoracic disease have disappeared; but the stiffness and occasional swelling of the leg continue.

CASE 5.

M. P——, aged 27: ill one week: admitted April 10th into 19 Job Ward, under the care of Dr. Barlow: a labourer in the gas-works: intemperate: healthy: has been for six months ailing somewhat,

(pains in loins,) but considered it insufficient to lay up for. A fortnight since was siezed with rigors, vomiting, and diarrhœa.

Present condition.—Much distress of countenance: head-ache: cerebrum intact: eyes very dim, pupils natural: tongue foul: breathing short, coarse, and cooing: râles general: slight cough: mucous expectoration: skin pungently hot, perspirable; bowels relaxed, griped: pulse weak, thready.

Hyd. \bar{c} Creta gr. iſs. P. Ipec. gr. i. Ext. Hyoscyam. gr. iij. ter quotidie.

J. A. A. \bar{c} V. A. P. T. 3ſs. Spt. Æth. Nitr. Tinct. Hyoscy. $\bar{a}\bar{a}$ 3ſs. t. d.

The following day, worse: bowels relaxed: much griping: râles more numerous: pulse quicker: skin hotter: countenance more dusky: tongue *morbidly clean*.

J. Menth. \bar{c} Sod. gr. xv. 6tis horis.

Hyd. \bar{c} Creta gr. ij. P. Ipec. gr. i. P. Cretæ Co. gr. viij. nocte maneque.

Rapidly improved. Bowels, in twenty-four hours, were quieted, and the unfavourable symptoms all relieved: cough still somewhat troublesome: expectoration mucous.

14th, four days from admission, he was convalescent,

CASE 6.

Fever—Bronchitis.

JOHN H——, aged 23: ill eleven days: admitted February 29th into 1 Job Ward, under the care of Dr. Barlow: a painter, living in Southwark; strumous, but enjoying good health. *Eleven days* ago, on returning from work, felt some shivering. The day following, to use his own terms, “he was so ill all over” that he gave up work. He has taken some simple medicine.

Present condition.—Countenance anxious, heavy: inertia almost amounting to stupor: tongue dry, injected, brown in centre, edges yellowish: anorexia: thirst: pulse 80, small, waivy: some cough, without expectoration.

Thorax.—Temperature posteriorly slightly raised: abundant cooing murmurs, with some sonorous breathing: cardiac sounds feeble.

Abdomen.—Liver turgid: bowels quiet: dejections dark and fluid: urine free from deposit, scanty, dark, sp. gr. 1015, not coagulable.

J. A. A. \bar{c} V. A. P. Tart. et Sp. Æth. Nitr. $\bar{a}\bar{a}$ m xx. 6tis horis.

Rhæi \bar{c} Calom. gr. xv. st.—Beef-tea.—Arrow-root.

29th. Slight improvement, although the tendency to stupor still continues: bowels open.

Repet. Mist. Hydr. \bar{c} Creta \bar{c} P. Ipec. gr. \bar{s} a. Ext. Hyoscyam.
gr. iiss. ter quotidie.

On the following day the symptoms of prostration are rather more prominent, "light brown sordes having appeared on the teeth." The bronchitis continuing as before, a blister was applied to the chest and the other medicine repeated. This in some measure relieved the chest, but the general symptoms still remained unfavourable till the 6th, when the first change for the better is noticed: "he feels now much better: aspect brighter: pulse 75, small and soft: cardiac sounds very weak: tongue cleaning: urine in larger quantity, with deposit of lithates for the first time.

On the 8th, having up to this time gone on with the medicine ordered on 29th, he was ordered

J. A. A. \bar{c} Tinct. Scillæ m x. et Sp. \mathcal{A} theris. Nitr. m xx. et Tinct.
Hyoscyam. m xx. ter quotidie.

The pills to be continued.

11th. The tongue has not cleaned kindly.—Pulv. Jalap. C. has been given, and with benefit. Pulse 72, feeble, still waivy; skin soft; and in all respects he is better.

Port Wine 6oz. daily.

14th.—All medicine omitted.

On the 20th he was presented, quite well.

CASE 7.

Fever—Bronchitis

JOHN D——, aged 30: ill seven days: admitted March 20th into 21 Job Ward, under the care of Dr. Barlow: a bricklayer's labourer; intemperate; healthy. One week back had rigors, general malaise, cough, &c.

Present condition.—Countenance anxious: skin moderately hot: tongue furred, white: pulse 78: bowels open: and symptoms of mild fever combined with bronchitis.

J. Menth. \bar{c} Sod. 4tis horis.

Not so favourable: head-ache and cough increased: sputa of a brownish stain, with a few streaks of blood: more heat of skin: tongue drier: pulse 96: some mucous crepitation posteriorly at right base.

J. A. A. \bar{c} V. Ipec. m xx. ter quotidie.

Hyd. Chlorid. gr. i. Ant. Pot. Tart. gr. $\frac{1}{2}$. Ext. Hyoscyam. gr. iij.
ter quotidie.

Improved gradually: cough remains somewhat troublesome: sputa

increasing in tenacity : pulse 90, weak ; and the mucous crepitation occasional. The pills did not affect his mouth.

30th. He was presented, quite well.

CASE 8.

Fever, mild—Old Bronchitis.

JULIA C——, aged 20 : admitted January 5th into 4 Lydia Ward, under the care of Dr. Babington : married ; now suckling her first child : never strong : subject to asthmatic attacks from an early age : is subject to leucorrhœa. A few days ago she was seized with chills, rigors, &c., soon followed by severe pain of the head, and subsequently, in the same day, vomiting. Thirst, anorexia, and pain of limbs have succeeded ; and the old cough and dyspnœa are aggravated.

Present condition.—Aspect heavy : eyes dull, suffused : face flushed : pain in head : tongue yellowish, moist : lips parched.

Thorax.—Resonance throughout on percussion : mucous râles general : emphysematous crepitation : pulse 92, weak : skin hot : bowels moderately open.

J. Menth. c̄ Sod.

8th. Improving from admission : all the acute symptoms have disappeared : the old cough, with some muco-purulent expectoration, alone remains : she is allowed one pint of porter daily ; and a dose of castor-oil has been given to clear the bowels, which has been effective. The secretion of milk, lately suppressed, has returned to-day : it is poor.

Mist. Conii.

Continued to improve ; and on the 10th, five days after admission, presented.

The preceding cases have been classed under the head "Fever with Bronchitis," not because the thoracic affection was the sole complication, but because it appeared to have been the earliest, and was the most prominent. Indeed, fever with a single complication is a rare disease ; nor can such a condition be reasonably looked for, when we consider the strong tendency to general congestion which so eminently characterizes fever. Certain organs, as the lungs and intestines, are perhaps more easily shewn to be involved during life ; but where death ensues, inspection clearly satisfies us of extensive lesions in other most important viscera, more particularly the liver and spleen, which are frequently not only gorged, but seem to be softened and degenerate. This

bronchitic complication is in general not so fatal as some others, but it is frequently difficult of diagnosis; for, in a great many cases, the symptoms attending this complication are merely an aggravation of the symptoms of common fever itself, without any of those circumstances which mark affections of the lungs; and it is only by strict observance of the intensity of such symptoms, and by a careful employment of the stethoscope, that we become acquainted with a complication, which, overlooked, acts as a powerful obstacle to recovery. Thus it often happens that a patient is admitted exhibiting only the symptoms of common fever, unaccompanied by cough or expectoration, and yet bronchitis to an alarming extent may be present, and probably the smaller tubes the seat of the affection: but in all such cases these symptoms of fever will be aggravated; as, for example, the dull heavy inexpressive countenance will be more marked; the stupor will be more complete; the delirium will be of a still lower and more muttering character. In addition, the cheeks, nose, and lips will usually be somewhat livid, and the skin, if the disease involve the smallest tubes, be intensely hot. It is, however, to auscultation chiefly that we should trust, and by it we shall most commonly be rightly guided. The aggravation of the symptoms of common fever observed in these cases is easily explained by the very imperfect arterialization of the blood produced by the complication; but the absence of the usual characteristics of bronchial disease is of a more difficult character. For considering the highly sensitive nature of the bronchial lining, and the violent cough, which the smallest foreign body produces, it is difficult to understand how, as in these cases, the tubes shall be loaded, and yet no palpable evidence be given of the same. In looking for an explanation, it is right to bear in mind that the cough and expectoration are absent only when the disease is seated in the small tubes: should the larger ones be involved, we generally have pretty clear evidence of it. Now it would appear that the sensibility of this bronchial lining decreases as the diameter of the tubes diminishes; for it is unquestionable, that, under all circumstances, secretion in the smaller tubes and vesicles does not produce the same efforts for its expulsion as a similar secre-

tion in the larger ones. Thus it is no uncommon thing to see pneumonia advance to consolidation of lung, without any the slightest cough or expectoration; whereas it is a very rare, if not altogether unknown occurrence, for inflammation of the bronchial tubes to exist without the presence of cough and expectoration. If this view be correct, it is easy to conceive, that a membrane, at all times possessed of comparatively small sensibility, may, under the depressing effects of fever, and of imperfectly arterialized blood, become so blunted as to give no evidence of disease. Muscular prostration alone will not account for it, for it is often greatest when the prostration is least; indeed it most frequently occurs in persons of fair muscular power, but of low nervous sensibility; whereas in highly-excitables patients, as hysterical girls, it is usually absent.

Another remarkable feature in these cases is the almost pungent heat of skin; and that, too, when the powers are low. Indeed, in some instances, it appeared as if the heat was greatest where the prostration was most alarming. This heat is always greater as the smaller tubes become implicated: it is frequently accompanied by maculæ of a bright colour, scattered over the body; but the skin, although hot, is seldom dry: there is generally some perspiration; while in severe abdominal complications it often feels like parchment. It quickly recovers, too, its healthy action, which, in the other complication, is always of slow progress.

In all these cases, so soon as the fever begins to subside the bronchial affection becomes more apparent: this may be often observed during the daily progress of the case. When the febrile paroxysm is at its height but little evidence is given of the thoracic affection; but so soon as this has passed off, a hacking cough, or some other proof of pulmonary mischief obtrudes itself; and, in the treatment, this consideration is of the greatest importance—that, while treating the bronchitis or the fever, we remember that *that* being cured, or alleviated, another disease remains behind. The drowsiness observed in many of these cases does not generally indicate great danger: many instances are seen where the patient appeared to sleep off the disease, as is sometimes observed in concussion.

It has been already stated that this complication is not so fatal as some others, certainly not near so much so as abdominal complication; and where the two do not co-exist, the bronchial disease may usually be removed. If, however, it be overlooked, or the intestinal canal be likewise affected, it is really a formidable complication. In the former case the tubes get choked, the brain is loaded, and the patient dies of cerebral affection. In the latter, whatever is administered for the relief of the thoracic complaint is almost sure to aggravate the abdominal one; and so, the attendant's hands being tied, the probability is much against the patient's recovery. Where, however, it is single, a favourable issue may be looked for. In the first place, such patients bear stimulants well, now so generally recommended in common fever. So far from aggravating the affection of the lungs, they actually appear to diminish it: at any rate they give the patient power to expectorate the effused matter, and thus remove one cause of irritation. These stimulants may often be administered, *even when the hot skin and bright maculae are present*; and a favourable change, evinced by copious perspiration and decrease of the stupor, will quickly ensue. It is, however, *as a rule*, better to wait till the more active inflammatory symptoms have been relieved, and then our stimulants (serpent, ammon., squills, wine) act remarkably well. And moreover, as in the majority of such cases the intestinal canal is quiet, we have a ready means of checking any inflammatory symptoms by gentle purgatives and mild diaphoretics. Thus hyd. \bar{c} creta, followed by castor-oil does well for the first purpose; while pulv. ipec. with pulv. ipec. c. and the vin. ipec. with spt. ætheris nit. are equally useful as the second means. Again, blisters may, in these cases, be beneficially employed in relieving the pulmonary congestion. When much congestion exists with deficient power, blisters are always useful: but unfortunately, in fever, their employment is frequently prohibited by the restlessness which they produce; thereby greatly aggravating the irritability and sleeplessness common to the fever, and thus, instead of *assisting*, powerfully *resisting* our measures: for in no disease, excepting "delirium tremens," is sound sleep more requisite than in common fever. Now these cases are usually free

from this common character of fever. They are not restless; and though the sleep be neither very sound nor very refreshing, still they do sleep, and do not, in the morning, exhibit the prostration, combined with irritability, which the cases with cerebral complication invariably do. Blisters can therefore be always used, and with great benefit. Lastly, a relapse is an unusual occurrence: When once a truly favourable change has taken place, the cases generally progress favourably; and not only the usual stimulants, as, serpent. and ammon., but likewise wine, porter, and light animal diet, may be freely ordered, at *even* an early stage of the convalescence. If, however, the disease assumes somewhat of an epidemic character, a different state of things occurs; for in these cases, *there being always a strong tendency to inflammation generally*, the patient can never be pronounced safe so long as the smallest trace of the complaint remains about him; and the removal of one inflammation is often only the prelude to the setting up of another. One or two remarkable instances of this kind have been given in these Reports: excepting the intestinal complication, they are by far the worst complications observed in common fever.

No. 1. in this list was, primarily, a case of cerebro-bronchial complication; for at an early period he had violent head-ache, and delirium soon followed, accompanied by cough and lancinating pain in chest. It will be seen, that, on admission, he exhibited the symptoms of common fever with the above double complication, and that these symptoms were of a sthenic character. This, combined with his history, suggested the propriety of blood-letting; but the depressing effects of depletion in such cases being remembered, a milder course was adopted. In looking through the case, it will perhaps appear that a small bleeding may have been beneficial in this early stage. The measures employed appear beneficial by the following day's report; but the shifting nature of the pain excited suspicion that the case would prove one of an epidemic character; while the incipient prostration rather favoured the non-depleting plan of the preceding day. The reports go on favourably; and, as the more violent symptoms had subsided, and the abdomen remained free from irritability, no difficulty in checking the bronchial complication

was expected; although, from the dark "flushed cheeks and nose," with the râles and expectoration, such complication was known to be great. But on the fourth day of admission a very remarkable fact occurred, which will probably be called a crisis. "He brought up a quantity of florid blood, with immediate relief to all his symptoms." Now whence was this blood derived? Was it the mere accidental rupture of some vessel, or was it a gradual but general oozing from the whole bronchial surface, for the relief of the congestion? The former seems the preferable supposition. It is, indeed, true that the crepitation, and the sputa deeply streaked with blood, would lead us rather to the conclusion that the hæmorrhage arose from the general bronchial surface; and this view would be strengthened by the very slight depression which ensued. But the suddenness of the hæmorrhage, the rapidity with which it stopped, the bright character of the blood, and the immediately marked change which it produced in his symptoms, incline to the opinion that a single artery had given way. But let it come from where it may, does it not point out the propriety of depletion in similar cases, where, with much bronchial obstruction, and even the presence of fever, we nevertheless have a pretty sound constitution to work on? This question is one of the most puzzling in practice, and one very frequently brought forcibly before every medical man's notice. In this particular instance, the propriety of depletion was still further supported by the subsequent treatment; for as some crepitation still existed, accompanied by streaked expectoration and persistence of pain, he was, on 13th, cupped to 8oz.; and from this date convalescence is said "fairly to have set in." These crises in fever, if so they may be called, are deserving of our attention. They are by no means so rare as it is generally supposed they are; although, whether they do actually tend to eject the poison from the system, or no, is far from clearly established.

In the summer and autumn of 1843 a larger number of fever cases of a very low type, complicated with cerebral affection, was admitted into Guy's Hospital. In the majority of these a remarkably thick deposit, highly offensive, was observed in the urine, about the height of the fever, which

disappeared as the febrile symptoms decreased; but it could not be clearly proved that an alleviation of these symptoms occurred *immediately* on the appearance of this deposit, as happened in the case of hæmorrhage under consideration. This deposit was certainly not owing to the urine remaining a long time in the bladder, for precautions were taken that it should never accumulate; and yet no decrease in the deposit was ever observed till the patient began to mend. The urine was not coagulable. In a case lately under Dr. Addison's care, just about the critical time in fever, (about the 10th day,) an attack of mumps came on, and the patient rather rapidly convalesced. It may be, after all, nothing more than a tendency in a certain organ to take on disease, which tendency is evinced during the depressing effects of fever; and as this subsides, the organ returns to its comparatively healthy state. When, however, an attempt is made to act through such an organ, we may probably consider it proper to follow the hint, and endeavour, by medical means, still further to carry out the intention of the constitution. There was, however, more in this case than simple bronchitis: the pain, expectoration, and subsequent dullness, all shew the existence of pleuro-pneumonia, from which, indeed, he had not quite recovered on his presentation; and still further prove the correctness of the first diagnosis, that it was a case of epidemic, in which a number of serous membranes would probably get involved. Luckily, here the intestinal canal remained sound till a late period, and thus allowed of the free administration of calomel and antimony. Just, however, as the active thoracic disease had been mastered, a tendency to disturbance in the abdominal cavity appeared; for he had "pain in the lower bowel, and frequent desire to go to stool." Had such symptoms come on earlier, what would have been the result?

In another case, of the same class, they did supervene; and that case proved not only one of extreme danger for a long time, but the convalescence was unusually protracted.

No. 2. is perhaps the most interesting case in the series, as shewing what judicious treatment and good nursing may do, under even the most unfavourable circumstances. It is unquestionable that this girl's life was in more imminent

danger than that of any other person in this class ; and yet, paradoxical as it may appear, there were others who actually had more true fever and inflammation about them than she had. Whence, then, sprung the greater danger in her case ? Undoubtedly from the hysterical complication. That she had a severe attack of fever and bronchitis is palpable ; but that they were both greatly aggravated and modified by her hysteria is equally so : the whole course of the case proves it. The symptoms of violence were all paroxysmal : at times she was comparatively free from them. The symptoms themselves were truly hysterical. It is stated "she is occasionally quiet, when all the unpleasant symptoms are much mitigated." Now such is not the form of fever with bronchitis. There are no such violent paroxysms, and the prostration continues *throughout*. The treatment adopted for the first three or four days appeared to have benefitted her. The ipec. hyd. \bar{c} creta. and Dov. pulv. in some slight degree checked the inflammatory action. Nor did this plan seem materially to affect the intestinal canal ; for although it is stated "violent diarrhœa ; fæces expelled at very attempt at coughing ;" still the anti-phlogistic and diaphoretic plan was persevered in ; and the following report adds, "the diarrhœa has ceased." From this it may be inferred that her intestinal canal offered no serious obstruction to the treatment ; and had not the hysteria so frequently prostrated her, an early change for the better might have been anticipated. It is remarkable, too, that although she had much cough, and that the bronchial tubes were loaded, none, or but little, expectoration was present : *even when, by stimulants, she was completely aroused from her prostrate state*. This may shew that the cough was owing, rather to hysterical disease, than to the presence of secretion in the tubes, although such secretion was there. On the 8th the repeated spasmodic attacks had brought on a most alarming state of things : "motions passed in bed : delirium of a low muttering character : slight twitchings of fingers and muscles of face." It was now that the highly judicious stimulating treatment was put in force, and carried to an extent seldom witnessed in a fever case. Serpent., senega, ammon., were ordered. Wine to be freely administered. These active measures unremittingly looked after by her clinical

clerk, somewhat rallied her at a time when nothing but death was expected. But following close on this improvement is a return of the diarrhoea, with a flushing of one cheek and pallor of the other, always an unfavourable symptom in bowel complication. The bronchial tubes, too, continued so loaded, that suffocation was momentarily expected. In addition to the stimulating plan, could any other have been adopted for at once quieting the system and relieving the tubes? Bleeding was clearly inadmissible: blisters did but temporarily relieve. Opiates may have checked the violent spasmodic attacks, but they may also have tended still further to congestion. A most unfavourable symptom now shewed itself—a cadaverous smell. A patient under fever emitting this peculiar odour but seldom recovers. It is common only to the last stage, when the vital powers may be said almost to have ceased to act. Does it denote an incipient destruction of the solids? It cannot be called a “crisis,” for then the result should be different from what it generally is. The plan of stimulating having from time to time rallied her, the fever ran its natural course; and, as it subsided, she had no other disease than bronchitis to contend against: the blisters alleviated. But it is remarkable, that, as the fever subsided, and her powers became somewhat improved, stimulants began to act injuriously; for it is added, with almost the first really favourable report, “some febrile excitement has occurred, accompanied by delirium.” The wine is decreased, and the next report is “symptoms all relieved.” Does not this shew, that, in the first stage, before she had been prostrated by the frequently-recurring spasmodic attacks, this girl would not have borne the stimulating plan? and should it not act as a caution against the early exhibition of the too-powerful stimulants, even when the powers are low, provided we have active inflammatory action going on? At the commencement of this case, the skin was of so bright a scarlet, that fears of scarlatina were entertained, more particularly as there was also some sore throat. It appears, however, to have quickly subsided. This bright-red colour of skin is by no means uncommon in fever; but it usually occurs in bowel complication, and, indeed, in some cases seems *immediately* to precede the abdominal attack; almost leading to the conclusion that the latter had been only an extension, and, in some cases a metastasis of the former

The next case (No. 3) is one of those of many complications to which allusion has already been made, and it is a very correct type of the class. The pulmonary complication is generally the earliest, but the others follow with great rapidity. Perhaps no class of fever cases is so difficult to manage, unless it be extensive abdominal complication; first, because each inflammation exhibits highly acute characters; and secondly, because we are unable vigorously to attack such symptoms, from the almost certain conviction, that, on their subsidence, inflammation in some other organ will be lighted up: in fact, in these cases there is tendency in every part of the body, *more particularly serous membranes*, to become involved. From the history of this case, the abdominal complication seems the earliest; and this history is confirmed by the appearance of the tongue, the condition of skin, and the other general symptoms on admission. We find in this case, too, that expectoration to a small extent existed, without the slightest cough; such expectoration apparently proceeding from the small tubes. Although his pulse was by no means indicative of weakness (90, rather full) still depletion was not adopted, and for the reason already given; and the value of such caution is evident from the following report, which states him to be weaker. This prostration continued progressing rapidly under every form of treatment; while, to still further embarrass the case, symptoms of acute thoracic disease (pleuro-pneumonia) on 13th came on, while the state of the bowels almost prohibited the exhibition of such remedies as were most likely to check them. Pil. ant. opiat. mit. \bar{c} calom. gr. i. was, however, given, and certainly did not seem to increase the abdominal irritability: still but little relief to the thoracic symptoms followed. We next remark the appearance of bilious vomiting, and, immediately succeeding it, a favourable change in all his symptoms. This vomiting recurred several times, and while it was present the bowels seem to have been rather quiet. The pain of chest, however, remained; but it may be questioned whether some of it, at least, was not owing to general debility and nervous irritability; for it is said "to be increased by motion, but not by coughing or deep inspiration." In this case, as in many others, blisters were employed, and freely; and, in the absence of the antiphlogistic and diaphoretic plan,

certainly appear to have been the best suited for the case. We next come to the remarkable feature in these cases. After apparent convalescence he is, on 1st of January, suddenly siezed with another attack of pleuro-pneumonia. Active measures cannot be used, although it is stated, "countenance flushed: heat of surface: great head-ache: pulse 112, not very compressible." The vomiting again returned, and, with it, the bowels again became confined. Did the liver become involved in this attack? The pneumonia was on the right side, and it is added in the next report, "conjunctivæ slightly tinged." Seeing the strong tendency to serous inflammation in these cases, together with the bilious vomiting and jaundice, we may almost conclude that this viscus had got involved. On the other hand, experience teaches us that there is frequently a jaundiced tint *when pneumonia of the right lung exists*. Another new feature in the case now arose, shewing the true character of the complaint—inflammation of the glands and of the veins of the thigh. This is a rare complication, and comes on chiefly at the close, when the powers seem exhausted. This manifold complication continued for many weeks, defying every remedy of whatever kind. At last, however, under great care and stimulating treatment, the patient gradually wore out the complaint. Does not this general inflammatory tendency shew the presence of a more than common febrile poison floating in the system? In this case the man was young, temperate, and healthy, and yet neither his own sound constitution, nor the measures adopted, could check the course of the complaint. Seeing such to be the case, is it not advisable, even in the earliest stages, freely but cautiously to administer stimulants when the case assumes an epidemic character? From the records of this case we can scarce hope to check the disease: should we not, then, husband the natural, or even supply artificial strength to meet the demand? Notwithstanding the apparent activity of the various inflammatory symptoms, mild tonics, combined with opiates and blisters, may be more beneficial than either direct or indirect antiphlogistics: the former, indeed, may be said to be inadmissible. It is questionable whether any form of inflammation, *although the symptoms be acute*, does in reality need depletion in any way; and this doubt is increased when such inflamma-

tion occurs in a fever case prone to depression, and subject to a certain marked course.

The remaining cases require no remark: they were all mild, and indeed were what we usually see in these complications. The most remarkable feature is the pungent heat of skin; not the heat of common fever, but that heat described by Dr. Addison as more particularly characterizing pneumonia. In some of these cases there was occasionally a tendency to bowel irritation: but a slight dose of *hyd. c. creta. p. ipac.* and *p. cretæ. c.* perfectly quieted them. This remedy will do well enough, *if mere congestion and irritability* of intestine exist: when, however, ulceration has set in, it not only fails to do good, but actually produces much injury. Case 5 was a good instance of the stupor and listlessness that attended these cases; and even when the other symptoms had somewhat abated, this drowsiness continued, as if there were an effort to sleep the disease out. This man's tongue did not clean kindly; and this was no doubt owing to his former habits. In the history it is said, "liver turgid, dejections dark, fluid." In a true bronchial case the tongue rapidly improves.

The next complication to which we come is the abdominal one; by far the most frequent, and most fatal.

CASE 1.

Fever—Ileitis.

HENRY M'—, aged $8\frac{1}{2}$: ill one week: admitted Nov. 8th into 2 Job Ward, under Dr. Addison: a strumous-looking boy, living in the Borough, exposed to contagion. Was seized a week since with the usual symptoms of common fever, for which he has taken medicine.

Present condition.—Pain principally in lower part of occiput: countenance rather calm: skin cool: abdomen soft: bowels relaxed: tongue injected at tip and edges, furred in centre, tendency to become dry: pulse 120, small.

J. Menth. c. Sod. ter quotidie.

9th—Some rambling in the night: two motions, watery, brown: skin hot.

The head to be shaved, cold lotion applied.

Omit the mixture if necessary.—Give arrow-root and beef-tea.

Up to the 17th the report is favourable. The bowels becoming regu-

lar, the mixture was continued. The head-ache, delirium, &c., had all either disappeared, or were much relieved. On the 16th he took a small dose of castor-oil, which brought away a good deal of bilious matter, but he is not so well: there is a hectic flush on his right cheek: abdomen is tense, with tenderness and gurgling on pressure over the *ilio-cæcal valve*: skin hot: pulse 120.

Omit the beef-tea.

On the following day no improvement: restlessness, with pain of head, had returned: there is also much heat of scalp: bowels slightly opened: skin hotter: respirations 26: pulse 108, feeble, but jerking: tongue furred: papillæ prominent: fine bronchial râles over left lung posteriorly: no dulness.

Apply cold lotion to head.—Omit every thing else.

Next report slightly favourable as he had slept well, and the pulse had fallen to 96, while the abdominal pain had subsided; but the tongue remained as before, and the face was still occasionally flushed: the thirst was urgent; and he now complained of twitchings of the fingers.

The administration of a dose of castor-oil on the following day seems to have thrown him somewhat back. The operation was rather violent, and the pain over the cæcum has returned: pulse 74: skin cool.

Infus. Serpent. ʒfs. Syr. Aurant. ʒi. Tinct. Serpent. ʒfs. ter quotid.—Sherry ʒi.

In *two days* from this, i.e. 24th, sixteen days after admission, he is said to be convalescent: tongue nearly clean: skin soft: pulse 60, compressible: bowels rather confined: pupils dilated: it is added, "they have always shewn this tendency."

From this date to Dec. 7th his convalescence appears to have proceeded uninterruptedly, though slowly, the bowels having a tendency to constipation, which was checked by small doses of castor-oil; and on the above day (7th) he was discharged.

CASE 2.

Fever—Ileitis.

ELLEN S____, aged 10, admitted Nov. 10th into 2 Lydia Ward, under Dr. Addison: a sickly child, exposed to contagion. Seven days back complained of febrile symptoms, followed, four days afterwards, by sore throat, pains in the chest, and cough.

Present condition—Eyes slightly injected, pupils natural: pulse

120 : tongue moist, slightly furred ; papillæ rising through the fur : bowels regular.

Pulv. Rhei. \bar{c} Calom. gr. xv. Jul. A. A. \bar{c} Spt. \bar{A} etheris Nitr. m x. ter die.

Slight improvement up to the 13th. The bowels acting too violently under the medicine, and some pain of left hypochondrium supervening, it was omitted. On 13th, after eating some fruit, the bowels became very much irritated : cheeks flushed : pulse 120, *hard* : tongue browner : pain and tenderness over right iliac region : delirium during the night.

Calid. Catapl. abdomin.—Mist. Cretæ Comp. $\frac{3}{4}$ ss. p. r. n.

The next day (14th) and following reports all favourable. The general symptoms subsided ; but pain over iliac region and umbilicus continues. Her bowels had become (17th) so confined as to require a small dose of castor-oil, which effectually relieved them.

21st. Complains of pain in forehead and chest during the night : there was likewise pain of abdomen : skin hot, supple : pulse 120 : tongue coated : cheeks flushed.

J. Menth. \bar{c} Sod. Sesquicarb. gr. vi. ter quotidie.

Ol. Ricini si opus sit.

23d.—Not so well : pain over region of liver : tongue more foul : in other respects as before.

These pains about the abdomen, with general disturbance of system, and occasional bilious vomiting (24th and 25th), remained very troublesome. A blister was applied over the liver, and hyd. \bar{c} creta once given (24th) : this moved the bowels five or six times. On 27th the pains disappeared : pulse came down to 60 : skin became cool : bowels regular : and from this time the girl convalesced gradually, till the 11th, when she was presented.

CASE 3.

Ileitis.

HENRY J —, aged 26 : ill twelve days : admitted Nov. 20th into 9 Job Ward, under Dr. Addison : a healthy, temperate, labouring man : had an inflammatory attack of the chest, about twelve years ago. Twelve days since was seized with the usual symptoms of common fever, accompanied by cough. He continued work for one week, and, three days back, applied for medical advice.

Present symptoms.—Countenance much distressed : eyes suffused : lips and mouth parched : tongue thickly coated, brown, cracked, and protruded with tremulousness : pain in head and abdomen severe : skin hot, dry : pulse 108, compressible : slight cough, with a little viscid

expectoration : a few petechiæ : bronchitic râles general in right lung : respiration distant at the base.

Rad. Caput.—Jul. Menth. \bar{c} Sod. ter quotidie.

Beef-tea.—Arrow-root.

No improvement on the following day : pain and griping in bowels, which are open, unabated : prostration increasing.

P. Conii. \bar{c} Ipec. gr. v. nocte manequæ.

Empl. Lyttæ sterno.

The following report (22d) still more unfavourable : prostration progressing rapidly : bowels very much relaxed : dejections copious and bilious : chalk mixture having failed in checking the diarrhœa, a starch enema with tinct. opii. m xxv. was this morning administered, with good effect. He was ordered a repetition of the injection at night, and chalk mixture if necessary : the pills to be omitted, and

Infus. Serpent. \bar{c} Ammon. Carb. gr. iij. et Tinct. Opii. m iij. 4tis horis.—Wine \bar{z} vi. quotidie.

The reports of the two following days (23d and 24th) are somewhat more favourable. The nights were better, and the symptoms of prostration were diminished : the bowels, however, were with difficulty held in check, the discharge *continuing bilious and offensive* : urine scanty : high-coloured.—Pergat.

25th. Less favourable : much desire to stool, but nothing passes : painful griping : countenance flushed : tongue brown, dry : symptoms of prostration again on the increase : *cough now troublesome : no expectoration.*

The same symptoms, but greatly aggravated, occur on 26th and 27th. On the former day, as he passed small fæculent lumps, a dose of castor-oil (zii.) was given, *guarded by opium* : this brought away, at the first motion, a large quantity of fæces, but set up the diarrhœa again, and symptoms of alarming prostration rapidly ensued. Some expectoration of dark brown character, streaked with blood, appeared. He was too ill to be examined.

The mixture was steadily persisted in ; and to it, on the 27th, aromat. conf. \bar{z} i. was added, but apparently with injury. On 29th the report is more favourable : the bowels had been opened only thrice, and there was much less pain : cough and expectoration as before : he expressed himself better. Each succeeding report is more favourable : the bowels slowly became regular ; and as they improved, the pain and tenesmus disappeared, while all the symptoms of prostration daily decreased. As, however, this favourable change occurred, the thoracic symptoms became somewhat more prominent.

Dec. 1st. His thoracic symptoms alone deserve notice; but he is gradually improving in all respects.

Dec. 22d.—Nearly well; cough alone remaining, and that in a slight degree.

CASE 4.

Fever—Ileitis.

JAMES M——, aged 49: ill four days: admitted 13th December into 21 Job Ward, under Dr. Addison: a hawker, of sound constitution and temperate habits: has been exposed to contagion. Four days back was seized with common febrile symptoms: purging has since come on, with slight pain in epigastrium.

Present condition.—Great distress of countenance: short, hacking cough; scanty, greenish, muco-purulent expectoration: skin moderately warm and perspirable: respirations hurried: some pain on inspiration: the pain in epigastrium increased by pressure or coughing: tongue furred, yellow: pulse soft, irregularly *intermittent*: thorax sound: abdomen soft.

Ordered to be kept quiet, as he was greatly excited, and to have arrow-root. Later in the day, serpent. and carb. ammon. were ordered, with beef-tea and a little wine.

For the two days succeeding admission the symptoms became more alarming: prostration increased: bowels much relaxed: tongue more dry: and the pulse so feeble and irregular that it could not be counted. The stimulating plan was persevered in.

On the night of 15th it is stated he had three fits within an hour, which, from the nurse's statement, seem to have been epileptic: in the intervals he was sick. At first the surface was cold; but much reaction subsequently ensued.

16th. He is lying in a better position; the legs are drawn up: pain in epigastrium still complained of: limbs are also painful; but the symptoms of prostration are certain less alarming: bowels not open.

OL Ricini.—Pergat.

The oil operated freely; and from this date (17th) to 24th a continued series of favourable reports is given. There was no return of the fits: tenderness of epigastrium, and pain of head and limbs, disappeared: pulse became regular, and sunk to 72; while skin, tongue, appetite, &c., gave evidence of rather rapid improvement. Occasionally a little mist. cretæ was necessary.

On 24th not so well: bowels opened four or five times in the night, the stools of an ochry character: abdomen free from pain. He is very irritable: skin hot, dry: pulse quickened, jerking: tongue furred, of a deep yellow: pains of limbs returned.

M. Cretæ. post. sing. sedes.—Cont. alia.

27th. A still more unfavourable report. Diarrhoea, checked for two days, has again returned; stools as before: pulse very feeble and irregular: surface universally damp and clammy: countenance anxious, vacant: teeth, lips, and gums loaded with sordes: tongue brown, dry: makes no complaint.

Wine $\bar{\text{z}}$ vi. Brandy $\bar{\text{z}}$ iv. daily.—Pergat.

28th. A little better report. The bowels are still relaxed, and the stools still ochry; but the skin has become warm and moist: lips, &c. are freer from sordes: pulse 84, soft, slightly intermittent: his position is better: some slight tenderness over sigmoid flexure.

CatapL abdomini.

Enema Amyli $\bar{\text{c}}$ Tinct. Opii. m xx. si opus sit.

Aromat. Conf. gr. xv. ex. Infus. Cuspar. ter quotidie.

Continue Wine and Brandy.

From this date convalescence proceeded regularly. The bowels were quieted, and, contemporaneously, all unfavourable symptoms ceased.

On 17th January, 34 days from admission, he was presented, quite well.

CASE 5.

Fever—Ileitis.

MATTHEW O——, aged 36: ill three days: admitted January 16th into 5 Job Ward, under Dr. Babington: a railway policeman, of delicate health. A few days back was seized with the common symptoms of incipient fever, accompanied by vomiting: has had medical advice.

Present condition.—General tenderness and stiffness in muscles: bowels open: tongue furred, injected, no maculæ: considerable tenderness in abdomen: pulse 90, compressible.

Hyd. $\bar{\text{c}}$ Creta. gr. iv. hac nocte.—Ol. Ricin. $\bar{\text{z}}$ iiij.—Jul. Menth. $\bar{\text{c}}$. Sod.

Bowels much purged by the medicine: great tenderness in umbilical region.

Hirud. xii. abdomin.—Conf. Aromat. gr. x. sing. dos. mist.

No material change for the next few days. He was ordered (18th)

Hyd. $\bar{\text{c}}$ Creta. gr. ij. P. Ipec. C. gr. iiij. t. d.

and on the following day, as he was evidently worse, so far as the abdomen was concerned,

Enema Assafoetid. $\bar{\text{c}}$ Tinct. Opii m xx. st.

Ol. Ricin. $\bar{\text{z}}$ ss. $\bar{\text{c}}$ Tinct. Opii m v. st.

Aug. Hyd. $\bar{\text{c}}$ Creta ad gr. iv.

From this time till 25th, improving: general symptoms more favourable; but tenderness in abdomen, chiefly in left hypochondrium, remains, although much less: bowels were pretty regular, and urine in large quantity, full of lithates. On the 25th, as the mouth was affected, pills omitted. He complained of a slight head-ache.

Mist. Salin. c̄ Tinct. Calumb. ʒi. t. d.

28th. Pain in head increasing considerably: that of abdomen almost gone. The tonic plan was steadily pursued.

Decoct. Cinch. c̄ Sod. c̄ Tinct. Lupuli.

Feb. 8th. Convalescing; but the tenderness of abdomen still occasionally troublesome: always distention and uneasiness after food.

CASE 6.

Fever—Diarrhœa—Hysteria.

MARY C——, aged 23: ill four days: admitted February 8th into 13 Lydia Ward, under Dr. Babington: a strong-looking housemaid, residing in Walworth Road. Ten days back slept in a damp bed, and soon after experienced chills, head-ache, and profuse diarrhœa.

Present symptoms.—Pain in back and loins: feeling of weight over eyes: tenderness on pressure over the whole thorax and hepatic region: occasional hysterical cough: cheeks flushed: tongue slightly coated: throat sore, tonsils enlarged: pulse 112, compressible: bowels opened three or four times daily, evacuations copious, bilious urine scanty: thorax sound.

Infus. Cuspar. c̄ Arom. Conf. ʒi. ter quotidie.

On the following day, as the skin was hot and dry, and the bowels rather confined, she was ordered

Hyd. c̄ Creta gr. ij. P. Ipec. Co. gr. iij. ter quotidie.

J. Menth. c̄ Sod. c̄ Conf. Aromat. ʒi. ter quotidie.

Bowels still confined: urine suppressed: pain over hypogastric region.

Ol. Ricin. ʒss. st.

The oil fully relieved the bowels: urine passed in large quantity, copious deposit of lithates. From this time improvement proceeded. The mercurial was continued till the gums were slightly touched.

There was evidently much hysteria mixed up with her symptoms.

16th. She was put upon

Infus. Serpent. c̄ Acid. Sulph. dil. m ij. et Acid. Muriat. m i. ter quotidie.

Under this plan she went on well; the bowels became quite regular; and, on 26th, she was discharged.

CASE 7.

Fever—Gastritis.

EMILY R——, aged 15½: ill five days: admitted April 3 into 6 Lydia Ward, under Dr. Barlow: a light-complexioned girl, a servant of all work: menstruates regularly, but rather profusely. After a fatiguing walk, six days back, she experienced severe pain in the abdomen and head. She had partaken of some bread and cheese and beer for luncheon. The violence of the pain subsided, but was succeeded by a gnawing feel in the left iliac fossa, and some vomiting. Her bowels, which had been confined for three days previous to the attack, have been twice acted on by medicine.

Present condition.—Face flushed: lips parched: tongue covered with a thick white fur: skin hot, dry: abdomen slightly distended: constant gnawing pain in the whole hypogastric region, *especially towards the left side, much aggravated by the slightest pressure*, by motion, or the passage of fæces or urine: *she cannot lie on the right side*: bowels moved thrice to-day by medicine: pulse 120, small: thorax sound.

Jul. Menth. ̄ Sod. ter quotidie.

Hyd. ̄ Creta gr. ij. P. Ipec. Co. gr. iij. nocte maneque.

4th. A little improvement: pain, although diminished, still continues: bowels opened twice: tongue as before.

5th. Less favourable: much greater febrile excitement, and pain very much aggravated, even without the slightest pressure: pulse 120, full, sharp: bowels opened twice.

Repet. Pil. 6tis horis.

6th. Bowels confined: abdomen tense, tympanitic; pressure produces great pain, but *if her attention be withdrawn, this is not so evident*: tongue cleaning.

Ol. Ricin. ʒiij.—Tinct. Opii m iij. st.—Cont. Pil. nocte maneque.

9th. Going on well till to-day: tongue covered with a thick white fur, *tip and edges of a deep red*: teeth covered with sordes: *skin desquamating, not so hot*: pulse 120, full: *slight sore throat*: some vomiting last evening: bowels purged six times in twelve hours.

Hyd. ̄ Creta gr. iſs. P. Ipec. gr. ſs. P. Creta C. gr. viij. bis quotidie.

The hair of her head to be cut short.

10th. Somewhat better: bowels checked: some punctiform erythema on chest and arms: urine is free from albumen.—Pergat.

Up to 18th a series of favourable reports: bowels were quieted: the erythematous blush faded away: *the tongue lost its foul fur*,

but became deeply injected: the urine was carefully watched, but remained sound.

On 18th worse night: head-ache: bowels confined: return of pain in abdomen, which is tympanitic.

Hyd. \bar{c} Creta gr. iv. st.

Ol. Ricini \bar{z} ss.—Tinct. Opii m iv. post horas iv.

Omit alia.

19th. Bowels opened four times: increase of abdominal pain since the last evacuation.—Pergat.

22d. Progressing favourably to-day. A little vin. ipec. (m xij.) was added to each dose of mixture. To-day, complains of gnawing pain in the abdomen: tongue rather more furred, with tip and edges red: bowels opened thrice: pulse 80: skin cool: lips parched: some vomiting to-day and yesterday: *considerable epistaxis*.

Catapl. ampl. abdomini.—Cont. alia.

On 24th progressing favourably: bowels rather inclined to be loose, and pain recurs at intervals.

Hyd. \bar{c} Creta gr. ij. P. Dover. gr. iv. nocte maneque.—Cont. alia.

26th. Still better: bowels rather too much confined; but her appearance is much improved, and she expresses herself better.

29th. Convalescing. A small mutton-chop daily.

CASE 8.

Ilcitis.

WILLIAM M——, aged 22: ill three weeks: admitted April 17th into 18 Job Ward, under Dr. Barlow. Great prostration: head-ache: tongue tremulous, dry, cracked: diarrhoea of three days: extremities cold: decubitus on back: a few petechiæ on lower part of abdomen.

Ammon. Carb. gr. iiij. J. A. A. Infus. Serpent. $\bar{a}\bar{a}$ \bar{z} ij. 4tis horis.
Beef-tea.—Arrow-root.

18th. No improvement. Sensorium unaffected: bowels relaxed: motions passed in bed: urine slightly opalescent by heat and ferro-cyanide of potassium. The symptoms of prostration remain as before; and there is some slight bronchitis.

Enema Amyli \bar{c} Tinct. Opii. m xxx. st.

Mist. Cretæ si opus sit.

Cont. alia.—Port wine \bar{z} iv.

Bowels continued irritable for the next two reports, although the injection and mist had been administered. Stimulants were fully administered, but no favourable change occurred.

21st. Some slight re-action: wine increased to \bar{z} xvi.

22d. Diarrhœa now checked, but abdomen slightly tympanitic: muttering delirium: pulse 120, very weak: prostration proceeds: takes less food.

Infus. Serpent. Co. Ammon. Carb. gr. v. Spt. Ætheris Sulph. C. m xv. 4tis horis.

23d. Worse: low muttering delirium increasing: face flushed: articulation nearly lost: skin warm, perspirable: urine drawn off: pulse 126: tympanitic distention increased.

Brandy ʒiv.

24th. Prostration continued; and at 5 A.M. this morning he died.

INSPECTION.—Extensive ulceration of intestine about six inches above the cæcum in the ileum.

CASE 9.

Fever—Gastritis.

MARIA S——, aged 20: ill one week: admitted April 17th into 3 Lydia Ward, under Dr. Barlow: a dark, florid girl, a servant of all-work living in the Borough: health generally good, *except that she is subject to tape worm*. One week back, after exposure to cold, experienced the common symptoms of incipient fever, accompanied by sickness. A few days afterwards she complained of lassitude and debility, succeeded by pains in all her joints, in the back, &c. Her catamenia, always regular, have appeared a fortnight before their proper time, and she is now unwell. She has been for a month subject to constipation, with frequent desire to go to stool, without effect.

Present condition.—Face somewhat congested: lips parched: tongue dry, coated with a thick fur: sensorium intact. *Thorax* sound: she has, however, a slight cough. Slight sore throat: thirst: anorexia: bowels opened from salts: abdomen distended with flatus: urine scanty, high-coloured, otherwise healthy: pulse 94, sharp.

Hyd. c̄ Creta gr. v. st.—Ol. Ricin. ʒfs. post horas iv.

J. Menth. c̄ Sod. ter quotidie.

18th. Face much flushed, *and there is a suspicious pinkness about the skin*: throat more injected: in other respects as before.

Hyd. c̄ Creta gr. ii. P. Ipec. Co. gr. iv. ter quotidie.

which appears to have considerably relaxed her bowels. Skin very hot, but pink appearance diminishing.

20th. Bowels still much relaxed: pain in abdomen on deep inspiration, *particularly in the course of the colon*. Dr. Barlow discovered a *small tumor, hard and painful, below and about two and a half inches to the right of the umbilicus*: skin very hot: her motions are fluid, and consist of mucus, *with a good deal of feculent matter*.

Hyd. \bar{c} Creta gr. i. Pulv. Ipec. Co. gr. iij. P. Creta Co. gr. iij.
sextis horis.

Enema Amyli. \bar{c} Tinct. Opii 3fs. st.

Repet. Mist. et. Mist. Cretæ pro re nata.

21st. Much anxiety of countenance, which is pale: abdomen still tender over the tumor: motions numerous, bloody mucus with feculent matter.

Repet. Enema; et Pergat.

22d. Some sickness: bowels relaxed; no *blood*; a fair proportion of fecal matter: symptoms of prostration appearing. A little expectoration of thin mucus.—Pergat.

24th. Weaker: bowels continue relaxed: symptoms of prostration more prominent. The season was now ended, but she continued one of Dr. Barlow's patients. She was put upon a mild nutritious diet, with four ounces of wine daily. For two weeks afterwards the diarrhœa continued, but was checked by m. cretæ et hyd. \bar{c} creta \bar{c} p. cretæ co. \bar{c} opio. She then gradually improved. The tumor which had been felt entirely disappeared, *and with it the diarrhœa*. Infus. serpent. was then ordered; a mutton-chop allowed daily; and at the end of May she was discharged, perfectly cured.

Indeed, it is rare to see a case of fever in which disturbance or irregularity of the intestinal canal does not exist, although often not to an extent to warrant its being called a complication. Abdominal disease with fever has so many symptoms peculiar to itself, and so few of those peculiar to fever, that it may almost be doubted whether true idiopathic fever be present in such cases or no. But, upon the whole, the presence of certain symptoms, the course which the disease runs, and above all the evidence of contagion in very many of these cases, all lead to the conclusion that the disease is fever, modified greatly by the intestinal disease.

Thus, a patient admitted with this complication does not exhibit the dull inexpressive look of fever: his countenance is indicative more of distress than stupor: his position is different; seldom on the back, and if so, with the thighs flexed: there is no delirium, or but seldom; none of the moaning so common in fever: yet the eye is dull; the patient unwilling to answer questions; the daily paroxysms occur as regularly as in the best-marked case of fever; and in a great majority of cases the disease runs through one or more families, and

then ceases. These considerations lead us to class it with the fever cases. At the commencement of an attack of this complication it is probable that the symptoms may not appear, to an inexperienced observer, so fraught with danger as those of other complications. The violent delirium which attends cerebral complication—the stupor, amounting almost to coma—with the dusky look and difficult breathing which accompanies bronchial complication, lead to the belief that there are, in reality, more serious forms of the disease than the one under consideration; and so they are in their symptoms throughout the whole course of the case. Putting aside the diarrhœa, this complication presents nothing to common observation strikingly alarming. Its very danger consists in its insidious approach and deceitful progress. The patient lies quietly in bed, reclining on one side, seemingly asleep, making no complaint; and yet ulceration of intestines to a fatal extent may be present. How, then, can the true state of the case be ascertained? First, the frequency of the complication should put every one on his guard against it; next, the countenance: in the early stage it is generally only flushed; but as the disease progresses, a symptom, never to be looked on without dread, soon shews itself—an alternate flushing and blanching of the cheeks—not both cheeks at once, but alternately. I have never seen a case of intestinal complication proceed to any extent without this symptom being present. Why disease of the lower portion of small intestine should cause this peculiar appearance in one cheek only at a time I know not: the fact is indisputable. Again, the tongue affords a true index. At the commencement, indeed, it is generally dirty white; but even then the tip is often red, and the papillæ of the other parts appear as if pushing themselves through the coat. In the second stage, it is of a bright red throughout, and so it continues to the close, when it either gradually reassumes its natural colour, or becomes brown and dry: the sensibility of the patient is generally increased: manipulation produces pain, more especially if it be made over the ileo-cæcal region. If diarrhœa and vomiting be present, they will more clearly point out the character of the complaint. The former is always there *after a time*: the latter often absent altogether. Indeed, these seem to depend

upon the point of intestine involved. If the lower portion of the ileum be the seat of the disease, vomiting is usually absent; if the higher, it is commonly present: whereas diarrhoea would seem to depend on a totally different state of things; being usually absent when the smaller intestines are involved and becoming a more prominent feature as the larger ones, or the lower portions of the smaller ones, get implicated. It is but right to recollect, however, that vomiting frequently ushers in an attack of common fever, under all circumstances; while diarrhoea may depend, not on actual disease in the canal, but in some foreign body lodged there; so that, both in the diagnosis and treatment, neither of these symptoms, valuable as they unquestionably are, should be taken for more than its worth. Such is a case of abdominal complication. Its course is soon told:—one unceasing series of relapses, till, by care and good constitution, the patient wears the disease out, or, on the other hand, sinks under it. No form of fever is so difficult to manage. Even the mildest food, administered to prevent thorough prostration, often lights up anew the disease, and undoes in a moment the work of a week. Stimulants of no kind suit them as a rule: they are immediately followed by increased flushing of the face, deeper injection of the tongue, and increase of the heat and sensibility of the cutaneous surface, soon succeeded by aggravated diarrhoea. In the way of medicine but little can be done. At the commencement, it is always advisable to give a small dose of hyd. c. creta, followed by a few drachms of castor-oil and a few drops of tinct. opii. This is requisite, to bring away any foreign matter lodged there, and its operation may often be a guide in our prognosis. If it act violently, and aggravate the general symptoms, the worst fears as to the condition of the canal are to be entertained. If, on the other hand, its operation be moderate, foreign matter, or offensive stool, be voided, and no aggravation of symptoms occurs, we may hope that mere *irritability* and *congestion*, not *ulceration*, are present. The action, too, of this purgative guides our subsequent treatment. Under the former circumstances, nothing beyond palliatives can be used: under the latter, a continuance of the mercurial with p. ipec. and pulv. ipec. co. or p. cretæ. co. may be usefully employed. Either of these combinations

lowers the inflammatory action, relieves the congestion, and checks the diarrhoea; but their exhibition requires much judgment, and their action much looking after. If ulceration has commenced they are perfectly inadmissible. When this stage has set in there is often severe pain on manipulation over the ileo-cæcal region, the usual seat of the ulceration; and much care is requisite in examining a patient, as, by undue pressure, we may materially assist the disease in its progress through the gut. If the pain be great, leeches should be applied over the part, followed by warm poultices; *which latter should always be used, for nothing produces so much ease in these cases as this application.* When ulceration has fairly set in, medicine is of no use. Opiates lull pain and check the diarrhoea, but they do not cure the disease. Preparations of lead will stop hæmorrhage; but they will not materially benefit the case. The best remedy is starch injection with tinct. opii: it soothes the part, does not quite block up secretion, and quiets the patient; while it may, in some measure, supply nutrition to the individual. The mineral acids, if they can be borne, are very good; for they not only check the disease in the intestine, but act likewise on the skin, and form, moreover, a pleasant beverage.

We have now seen the frequency of this complication, the symptoms which characterize it, the danger which attends it, and, when death has occurred, the lesion produced by the disease. We have seen, too, how doubtful is the action of medicine after a certain stage. It may not be out of place to add one or two general observations. The frequency of this abdominal complication is so great as to have induced certain writers to make it fever itself. This certainly is an incorrect doctrine. All the symptoms, to which we give the name, fever, frequently occur without any disease of intestine; while very serious intestinal lesion may exist without the development of these *fever* symptoms. Fever, in these days, is more properly considered a something distinct from inflammation, but having a strong tendency to favour the development of inflammation in an organ, such inflammation running into the low or typhoid form. All the organs of the body, but more particularly the abdominal viscera, seem to suffer from congestion during the progress of the fever; and

certainly the intestinal canal shews always a strong disposition to take on this sub-acute inflammatory action. Now to me it appears this frequency may, in some measure, be accounted for. Intestinal disease nearly always forms part of the fever of children. Now, considering the activity of these organs during the growth of children, the great load which is thrown on them in building up the frame, we should, *a priori*, set them down as the most likely to take on a diseased action when some poison, as that of fever, had vitiated the blood; and such we find to be the case. Again, in grown-up persons it can generally be ascertained, that, previous to the attack, the bowels had been long neglected: indeed this complication frequently exists in the cases of young women, where it is well known the regulation of the bowels is shamefully neglected. It is by no means surprising, that, under circumstances like these, the intestinal canal should shew a strong disposition to run into inflammation. This intestinal complication is often seen in thin, delicate persons with remarkably fair skin. In such it is usually more than ordinarily troublesome, and seems rather to attack the glands than the mere membrane. Now in persons of this description the cutaneous circulation is commonly active, and often disordered, while there is generally a tendency to glandular disease. A remarkable pinkness of the skin is not unfrequently observed in these complications. It is not common in others; and what makes it more remarkable is, that it seems closely connected with the abdominal affection, the disappearance of the former being frequently succeeded by the symptoms of the latter. In these cases the skin is generally *dry* as parchment, and but little benefit is obtained for the intestinal canal till the cutaneous function has been restored. It may be said such cases are scarlatina. They may certainly be so. Sore throat frequently accompanies them; but the most careful attention to the urine never detects any change, nor have we any evidence that dropsy, so constant a sequence of scarlet fever, ever occurs. It may perhaps be proper, keeping in mind how prone the kidneys are to disease in scarlet fever, to avoid, in these complications, giving such medicines as act on those organs. In another kind of abdominal complication, where the intestinal canal (and it may be the liver) is alone involved,

diuretics will, I presume, be beneficial. They will throw off a large quantity of the bile which is irritating the intestine, without giving that intestine extra work; and this the kidneys can do, *provided* the small intestines be pretty free. If the circulation through these be impeded, it is useless to try to produce renal action. Several of these cases shew it clear enough; but certain cases of constipation shew it much better. Perhaps, in these abdominal cases, when, with diseased intestine, there is also this congested skin, a warm-bath may be found beneficial: for unquestionably, if a mild, warm perspiration can be produced, the intestinal irritation seems to receive a check: nor is it at all unreasonable to suppose that the disease of one of these membranes should involve the other. Their close intimacy is well known; but, physiologically, they play each other's part. The intestines very commonly, in cases where the skin has ceased to discharge its usual functions, more particularly if the kidneys be diseased, as in morbus Brightii, take on the action of these two organs to a great extent, and no doubt tend to ward off for a time the fatal result. In such cases, the glands of the intestines are always hypertrophied. In many of the cases under consideration it will be advisable, keeping this in mind, to throw the action of the intestines, so far as we can, on the skin and kidneys; and, during convalescence especially, by these two organs to give the intestines as much quiet as possible.

No. 1: a good specimen of the class. Not much prostration; not much pain; but the tongue at once directs the attention to the abdomen: it is "injected at tip and edges, furred in centre." There was probably no actual inflammation, but only a highly-excitabile condition of mucous surface, requiring but little to throw it into actual disease; for as the bowels had become quiet, and, indeed, appear to have required opening, a small dose of castor-oil was administered: and what is the immediate consequence? Why, the evacuation of a good deal of bilious matter, but with an aggravation of his symptoms: "hectic flush on his right cheek: abdomen tense: tenderness and gurgling over ileo-cæcal valve." What was formerly irritability is now probably inflammation: there is a hot skin: great restlessness: prominent papillæ. The "let alone" practice is now adopted, slight support being alone administered;

and there soon follows some alleviation of the symptoms. And it is well to remark that another small dose of castor-oil produced exactly the same result; and yet would not this bilious matter, lying in the intestines, have kept up irritation? And here lies the difficulty in managing these cases. The evacuations shew the propriety of purgatives: the action of such purgatives forbids their administration. In this case the disease was favourably checked, for he soon rallied under mild stimulants. The progress, like nearly all of this class, is described as slow; and seeing the injury done to an important membrane, none other can be expected. It is remarkable, that, in nearly all these abdominal complications, the bowels, at the end, become constipated, and often require strong purgatives. Are, however, purgatives necessary? Is not such constipation rather a wise provision to secure rest and means of improvement to an injured surface? and would not low nutritious diet, and, it may be, oleaginous injections, do all that is necessary?

No. 2. presents one peculiarity at the commencement: it is one, however, which often exists, and is probably highly important. I allude to sore throat. In other respects it is a case closely resembling No. 1. It is probable that the inflammation never proceeded so far in this case as in the former, as it appears to have borne the purgative better. It is also likely that the higher part of the small intestine was involved, for there was bilious vomiting and pain over the region of liver and about the umbilicus: these a blister relieved. This measure is not often beneficial in cases of truly diseased ileum.

No. 3. threatened to be a severe case at the first. It is probable that the old thoracic mischief somewhat masked and modified the abdominal disease. It is likewise curious to observe how, as the latter became prominent, the former, in some measure, subsided; and again, as the latter almost completely subsided, the former fully returned. There was, at the commencement, serious prostration. It is highly probable that much abdominal disturbance existed from the first, although he neglected it; at any rate he had continued to work for one week after his attack, and he was more likely so to do with an abdominal than with a cerebral or pulmo-

nary complication. The treatment is directed to the thorax—blister, pil. conii c̄ ipec.; but on the following day all the violence of diseased ileum develops itself. Here, as frequently happens, chalk mixture was of no use: it is seldom so effectual as starch injection with opium, and certainly not so safe. The latter seems to exert its full influence without contact with the diseased part: the former, while checking the diarrhœa, seems often to injure by such contact. Here, as in the preceding cases, the discharge is such as we should like to get from the intestines, and yet the general symptoms forbid it. The urine is scanty, high-coloured: its scantiness depends on the diarrhœa; but it shews, by its colour, the large quantity of bile floating in the system. May we not, in some of these cases, by acting freely on the kidneys, in some measure relieve the intestines, and throw off, by the former channel, a portion of this bilious matter? Another point in this case is “the desire to go to stool, but nothing passes: painful griping.” This is generally taken as a proof that there is fæcal matter lodged there, and is commonly considered to call for purgatives. In most cases such may be the fact, and certainly, in the present, there was such lodgment of fæcal matter; but I believe it will occasionally be found to depend on a quite different state of things, viz. from a *completely empty state of intestines, preceded by much purging*. It seems as if, by such purging, an irritable condition of surface was set up, upon which the slightest secretion so acts as to produce in the patient a desire to stool. Certainly many such cases have come under my eye, and have been benefitted much more by an opiate, than by a purgative. Luckily this patient's strength was kept up by stimulants, while the bowels were kept in check by the injections, &c., so that he managed to wear the disease out. We must not overlook one fact in this case, and that of the first importance in the treatment. On the 27th it is said “conf. aromat. 3i. was added to his mixture, but apparently with injury.” This shews the inflammatory character of the attack, and clearly points out the difference between this man's case, and that of a person in advanced fever of another kind, ending in diarrhœa. When the intestine is the seat of inflammation, aromatic confection generally aggravates the symptoms; but

where there is want of power in the circulation, and mere exudation from vessels, it is highly beneficial.

No. 4. This case seems to have commenced with purging; and the probability is, that, along with the intestinal disease, the stomach was likewise affected: for it is not very common, in diseased intestines with fever, to have the pain and tenderness at the epigastrium alone. It may be there, but generally in conjunction with pain at the ileo-cæcal region. When this pain exists in the epigastrium it is frequently accompanied by vomiting; and the two combined may be said pretty clearly to point out the stomach, or superior portion of small intestine, as the part involved. There was an intermittent pulse in this case, without evidence of diseased heart. It is no uncommon thing to have an intermittent pulse in fever; but it is generally found in cerebral complications, more especially in such as have suffered from malaria: then, with a remarkably slow, you often have an intermittent pulse.

Do the fits, which occurred two days after admission, and said to be epileptic, throw any light on this pulse? Together with these fits was some vomiting. This may either have reference to the head, or may perhaps, with more propriety, be referred to the stomach and liver. Some improvement certainly appears to have succeeded these symptoms: the bowels, after this, following the usual course, became somewhat confined, and required castor-oil to move them. On the 24th, without any assignable cause, the bowels again became relaxed, and all the unpleasant symptoms recurred. Stimulants kept him up; and after a time a favourable change was observed: but when the diarrhœa had reached its height, for the first time a pain over the sigmoid flexure of colon was felt, as if the inflammatory action had travelled downwards. The convalescence was good; from which we may argue that no material lesion of structure had occurred in the canal, but that the symptoms were due rather to sub-acute inflammation.

No. 5. A remarkably mild case, exhibiting no striking feature, except the extreme tendency in the bowels to run into diarrhœa. His was probably a case of pure gastric irritation. The vomiting and pain over the umbilicus, and subsequently in the left hypochondrium, point out the stomach, or upper

bowel, as the seat of mischief. The whole canal, was, however, in an irritable condition. Here, again, the aromatic confection appears to have been of no benefit. Assafoetida enema, guarded by tinct. opii, seems to have benefitted him, although it does not appear, from the report, that evacuations followed its administration. Indeed, after the first two or three days this man's bowels were rather costive than otherwise. The mild mercurial, combined with pulv. ipec. co. seems at once to have checked inflammatory action and relieved congestion; but his abdomen was not quite free from uneasiness, even on his presentation, the symptoms still pointing to the stomach. It is probable this man had disordered stomach long previous to his illness.

No. 6. Another mild case: fever arising from sleeping in a damp bed. This was followed by profuse diarrhoea; certainly rather an unusual occurrence for fever so contracted. It is probable that her bowels had been confined for some time, and hence she suffered severely from a cause, which, under ordinary circumstances, would have rather produced her other symptoms—sore throat, general tenderness, &c. Nor does it appear, after her admission, that the bowels ever shewed any tendency to looseness; indeed, constant attention was necessary to keep them open. It is singular, that, during this constipation, the urine was suppressed, and that as soon as they were freely opened the flow of urine was copious;—another proof that free circulation through the small intestines is necessary to the action of the kidneys.

No. 7. presents many interesting points. In the attack we observe how prone any organ, whose natural functions have been disturbed or arrested, is to take on disease on the slightest opportunity. This girl's bowels had been confined for some days previous; and under the depressing effects of a long walk, and the slight irritability which bread and cheese may produce, they immediately became seriously disturbed, if not actually inflamed. She soon experienced a gnawing pain in the left iliac fossa, and had vomiting. This is not the point at which we mostly dread abdominal complication; nor does it appear, from the subsequent account, that this was more than a temporary feeling; for on admission, together with other symptoms betokening acute abdominal disease, a pain

is complained of in the hypogastric region, especially towards the left side. Another interesting symptom is the inability to lie on the right side. Now cases of this complication usually lie on either side. In this case it is probable that there was slight inflammatory action going on in the whole of that side; (peritonitis?) but what is more probable is, that there was very much hysteria mixed up with some real disease. This would account for many of the symptoms, and certainly this one of inability to lie on the right side. That there was great hysteria present is evident from the report of the 6th—"pressure produces great pain; but, if her attention be withdrawn, this is not so evident." Her bowels, too, did not give evidence of much inflammatory action; for even under medicine they were seldom opened more than twice daily. On the 9th, however, symptoms of decided inflammatory action in the intestines supervene, and we are told "skin is desquamating, not so hot." It had been before intensely hot and dry. This is deserving of great attention, for it is frequently observed. Did this cutaneous disease, and the subsequent suspension of the skin's functions, set up the abdominal affection? And if so, might not measures, directed to the relief of the former at an early period, have warded off the latter? Indeed, p. ipec. co. had been administered, but it does not appear to have acted on the skin. Such cases are not cases of scarlatina, at least the urine is never observed to give evidence of this disease; and they seldom occur, except in these abdominal complications. From the general tenor of this case it is probable no particular point in the intestinal canal was singly involved, but most likely the whole was in an irritable condition: the symptoms certainly indicated no one point, and the hysterical character of the patient would rather argue in favour of general irritability. Thus she sometimes had diarrhœa, sometimes vomiting, and the pain was always diffused—never confined to one spot. The pulse, too, was generally good, not indicative of much inflammation. 22d she is said to have had "considerable epistaxis." Was this a critical discharge?—she had several times suffered from weight and oppression of head; or was it merely an accidental occurrence? From this time she appears to have progressed slowly, the abdominal pains recurring at intervals.

No. 8: a hopeless case from the first. No previous history was procured of his habits, health, and so on: but it seems he had been ill for three weeks, although the diarrhœa was only of three days' standing. If this were the case, his constitution was probably a broken-down one; for it appears there was "extensive ulceration of intestine about six inches above the cæcum." The pneumonia, too, of which he gave but slight evidence, tends to shew the badness of his constitution. The decubitus on his back, with the petechiæ, gave proof of his great prostration; for, as has been before remarked, these cases seldom lie on the back till near a fatal close. To be sure, in this case, the first object was to produce re-action, even before the diarrhœa was checked; and consequently a stimulating plan was adopted. No benefit appears to have arisen from this plan till 21st (four days from admission), when it is stated "some slight re-action." The wine was to-day increased to ℥xvi. , and certainly with no evidence of improvement, for the slight reaction soon subsided, and muttering delirium was set up. Now it often happens, that when a small quantity of a stimulus produces some reaction, a large one will produce prostration, even without producing much previous excitement: it seems as if it suddenly extinguished the little vitality possessed by the individual. This is shewn in cases where a large quantity of stimulus can be borne, provided it be administered in small proportions, but where it produces rapidly fatal consequences, if given in large ones. Under the most favourable treatment, recovery could not be hoped for in the present case; where, with a bad constitution, diseased kidney, and pneumonia, we had extensive ulceration of intestine, and diarrhœa of three days' duration. It is well to observe how, under the stimulants, the skin carried on its function, and in a healthy manner. At the close of this man's life it is said to be "warm, perspirable," not cold, clammy, such as we generally have in ulceration.

No. 9. The most interesting feature in this case is the tumor, "small, hard, painful below and about $2\frac{1}{2}$ inches to the right of the umbilicus," which seems to have been intimately connected with her severe symptoms; for with its disappearance the diarrhœa &c. entirely ceased. What was the nature of this tumor? Was it fecal matter lodged there?

Was it a circumscribed thickening of intestine? Was it glandular? The first is perhaps the most probable supposition. Her bowels had been long confined, and, as well from her own sensations as from the quantity of matter subsequently voided, appear to have been loaded. She had pain, particularly in the course of the colon; the feel of the tumor was more like a foreign body than either thickening or gland; the blood and mucus in the stools tend rather to this conclusion; lastly, the medicines employed would have aggravated any glandular enlargement; whereas, by a steady perseverance in them, this girl's symptoms were finally subdued. Still it is by no means uncommon in these cases to find a circumscribed thickening, which in some measure seems a limit to the ulceration; and occasionally, in thin people, enlarged glands may be detected. Had it been the former, the distressing symptoms would probably have been checked sooner than they were: had it been the latter, she would most likely have had more of hectic than she appears to have had. The length of time it remained is no objection to the present view of the case. It would have been satisfactory could any foreign body, as a cherry stone, have been detected in her evacuations. In this case, as in several of the others, there was a suspicious pinkness of skin and sore throat; and in this, too, till the *whole* intestinal canal was relieved, was there diminution of urine. It will not do that the large intestines *alone* act; the small ones must also perform their duty before this secretion can take place. On admission, this girl is said to be "unwell." It is by no means an uncommon thing to see menstruation come on during fever; and certainly, in many cases where women were nursing, so far from the secretion of milk having been checked, it rather appeared to have increased, so much so, as greatly to aggravate the distress of the patients. It would be interesting to inquire in such cases whether the secretions were much modified by the disease.

REPORT OF CASES

OF

INJURIES TO THE ABDOMEN.

CASE 1.

Injury to the Abdomen—Cured.

BENJAMIN R—, aged 20: admitted into Philip Ward, under Mr. Cooper, on October 1. He received a severe contusion of the abdomen, which was caused by the breaking of the fly-wheel of a saw-mill, a portion of which, after passing through a two-inch door, struck him and knocked him down. Having been bled, he was sent to the hospital. He was partially collapsed, and unable to stand up on account of the pain. The umbilical region was swollen, tender, and very hard. Ordered,

Hirudines xx.—Enema communis statim.

Bowels were relieved by the injection.

Oct. 2. Passed a comfortable night, but still complained of pain and tenderness in the umbilical region. Ordered,

Hirudines xx.

He improved rapidly; the symptoms subsided; and he was presented, cured, on the 7th of October.

CASE 2.

General injury to Trunk.

JOSEPH A—, aged 26: admitted into Cornelius Ward, under Mr. Key, on June 17. Had been crushed between a barge and the side of a ship, and was brought to the hospital in a complete state of collapse. The principal injury seemed to be along the left side of the loin, chest, and pelvis. No fracture or important lesion was detected. A catheter was introduced, which brought away some blood. He rallied slowly in the course of the day, complained of general aching pain over his body and loins, and passed his water stained with blood. He was cupped, but grew faint after three ounces of blood had been abstracted.—Stimuli ordered.

June 18. Has rallied; complains of general pain; water becoming clear; tenderness over the left kidney, which has probably been slightly injured.—Ordered, Julep. Pot. Citr.

19. Altogether better: seems to suffer more¹ from general tenderness than from any decided local injury.

Left the hospital, July 1st, quite well, excepting a slight weakness in his loins.

CASE 3.

Obscure injury to Abdomen—Recovery.

MICHAEL P——, aged 22: admitted into Stephen Ward, on February 25, under Mr. Morgan. Had fallen from a vessel into the mud. He was cold and insensible when brought to the hospital, but revived after being in the warm bath. In the evening he was complaining of great dyspnoea, pain over chest, abdomen, and loins; tightness about the scrobiculus cordis; great excitement and irritability. He passed bloody urine; had great tenderness in the lumbar regions, particularly the left; and his pulse were quick, but very weak. About 3x. of blood were taken from the arm, which gave him relief, and caused the pulse to rise. Ordered, calomel and opium; fomentation to the belly.

Feb. 26. Better; water clear; still suffers from pain.

March 5. Getting well.

14. Arose this morning perfectly well, and was on the point of leaving the hospital, when, about 8 A.M., he felt some uneasiness across the lower part of his abdomen, and in the left loin. On going to stool, instead of passing water he voided a large quantity of pure blood from his bladder. In a short time he passed a second, and then a third quantity of blood, and became faint: some wine was given him. At 10 o'clock he passed some more blood, which seemed to be arterial, and probably from the kidney. He complained of uneasiness rather than pain across the abdomen and left loin. Ordered,

Pulv. Opii gr. i. statim.

Tinct. Ferri Sesquichloridi ʒi. Tinct. Opii m xx.

Bladder of ice over the pubes.

At 2 o'clock he had had no return of hæmorrhage, and his water was merely tinged with blood.

From this time he had no farther hæmorrhage, but suffered from intolerance, and pain during micturition. He was cupped over the loins on March 19, with great relief; and he left the hospital on March 29, quite well.

CASE 4.

Injury to Abdomen—Peritonitis—Recovery.

ROBERT R——, aged 32: admitted into Cornelius Ward on October 25, in the evening. Early in the morning he had been knocked down by the shaft of a cart, the end of which struck him

violently on the right side of the abdomen, near the lumbar region. He worked as a coal-porter, and led the usual life of his trade. Had a double hernia, which were generally down, but easily reducible. The accident was followed by some collapse, and by great pain in the part, extending over the abdomen. He was bled largely, and had castor-oil, salts and senna, and some pills. The symptoms, however, became aggravated; and in the evening he was sent to the hospital.

Oct. 26. His pulse were quick, sharp, weak, and intermitting; countenance distressed and anxious; extreme restlessness; abdomen swollen and tense; his ruptures were down and easily reduced, but soon descended again. He complained of great pain, aggravated on pressure, over the whole abdomen; pain and tenderness on right side; a sense of constriction at scrobiculus cordis: great dyspnœa; extreme thirst; flushed countenance. Had not vomited; passed his water readily; but his bowels had not been opened. Ordered castor-oil injection, and fomentation to the abdomen. The injection returned without producing any effect. Ordered,

C. C. to the injured part; 40 leeches over abdomen.

Calomel gr. ij. Opii gr. ij. statim.

In the evening he was much easier, and had some sleep: pulse softer and fuller: the distressing symptoms mitigated: bowels still not moved. Had had some castor-oil, but was ordered an injection of house medicine if bowels were not speedily relieved.

27. Slept tolerably well. Seems free from pain, and the symptoms are altogether abated. Pulse intermits, and is sharp. Bowels were evacuated after the last injection, but probably only from the large intestines: nausea, but no vomiting. Bowels were relieved spontaneously at 1 o'clock, A.M.; but he was still labouring under acute peritonitis. Ordered,

Cal. gr. ij. Opii gr. i. 4tis horis.

Hirudines xl. abdomin., and to foment abdomen.

28. A good night: bowels relieved: all symptoms abating.

29. Bowels plentifully opened in the night; and he has also vomited profusely. He continued to vomit all day, and was pretty freely purged. Abdomen is now soft, and he is free from pain. Pulse still intermittent: great thirst. Ordered, mustard poultice; small doses of brandy and water; and aromatic confection with opium in some warm infusion, if purging continued.

30. Much better: purging diminished: sickness stopped.

Nov. 12. Still suffers from some abdominal pain and tenderness on the side of the injury: bowels relaxed.—Ordered,

Confect. Aromat. Tinct. Opii ex Mist. Camph. t. d.

Left the hospital, on Nov. 20th, quite well.

CASE 5.

Wound of Abdominal Parietes—Recovery.

THOMAS B——, aged 27: admitted into Accident Ward, under Mr. Key, on Sept. 14. A carpenter, and worked at a saw-mill: in good health. Whilst standing too near the saw, he received a lacerated wound of the abdominal parietes; it was two inches in length, on a line parallel with the crest of the ilium, extending to the umbilicus, dividing the muscles, but not penetrating the peritoneum. The wound was brought together with pieces of plaster, and a roller applied around the abdomen. He suffered little or no symptoms; the wound granulated healthily; and he left the hospital on October 19th, 1842, cured.

CASE 6.

Extensive Laceration of Abdominal Parietes—Lived Ten Days.

ALEXANDER S——, aged 38: admitted into Accident Ward, on June 7, at 10 o'clock A.M., under Mr. Cooper. A baker: a healthy, temperate man. His horse having run away, he was violently dragged between his cart and the projecting ledge of a butcher's shop, the corner of which tore up the whole layers of the abdominal muscles in a line from the spinous process of the right ilium to the symphysis pubis, laying bare a large surface of peritoneum, and raising it up from Poupart's ligament. The fore part of the bladder was exposed. The peritoneum was not wounded, but the intestines could be distinctly seen projecting it forward. The cord appeared to have escaped laceration. There had been considerable hæmorrhage, and he was collapsed. His urine was drawn off untinged with blood. The wound was cleaned, the ragged muscles arranged as well as they could be, and the edges brought together with sutures: the thighs and shoulders raised. Stimulants were given, and warmth applied. He soon rallied from the collapse, and in the evening his pulse was rising. Ordered,

Hyd. \bar{c} Cret. Pulv. Jacob. ver. \bar{aa} gr. v. st.

In the course of the night, as his pulse increased in strength, $\frac{3}{4}$ x of blood were taken from the arm. Ordered,

Cal. gr. i. Opii gr. i.

June 8. Abdomen very tender on pressure, especially on the left or uninjured side, but no tension. Leeches applied, and a castor-oil injection given. In the evening his bowels had not been opened; he had great thirst, and considerable febrile excitement: the injection had not returned. Ordered a full dose of castor-oil, and, if necessary, an injection of salts and senna; both of which were administered.

9. Bowels opened freely about 9 o'clock A.M., by which he was

relieved from the abdominal weight and uneasiness that he had greatly complained of. Passes his water freely: complains of intense thirst. Abdomen fomented, and warm-water dressing applied over the wound, the cutaneous edges of which are in perfect apposition. Takes barley-water and soda-water; and has had beef-tea sparingly. At 9 P.M. was somewhat better, but complained of general tenderness. Some of the sutures were removed, and an offensive, thin, sanious serum, mixed with bubbles of air, was evacuated. Merely to have diluents.

10. Had a grain of calomel and opium during the night: bowels plentifully opened this morning. No untoward symptoms. Ordered,

Cal. gr. iij. Ext. Hyos. gr. v. h. s.

as his bowels had not been thoroughly relieved.

11. Bowels opened: seems better: suffered much from excessive acidity of stomach, which was relieved by soda-water and magnesia mixture.—Ordered half-a-pint of porter.

12. Going on well. Wine instead of porter.

16. His strength has been sinking for the last two days, and his stomach will not bear much nourishment: there is an immense discharge from the wound, and the sloughs are slowly separating. He breathes fast, and with difficulty, as if the injury to the abdominal walls would not allow the descent of the diaphragm. Sweats profusely. Died on June 17, at 11 A.M.

SECTION CADAVERIS.—There was very slight evidence of peritonitis at the lower part of the abdomen. The whole surface of the wound was somewhat sloughy, but inclining to take on a healthy action. The kidneys coarse in their texture. Liver somewhat inflamed recently. Pneumonia at the back part of both lungs. The fourth rib on the right side fractured near the spine, but not puncturing the pleura. About a pint of coagulated blood was found in the right pleura (which latter was adherent to the lung); but it was not discovered from what lesion it might have flowed.

CASE 7.

Railway Accident—Extensive injury to the Abdomen and Thighs—Death.

GEORGE G.—, aged 21: admitted on Dec. 7, into Accident Ward, under Mr. Cooper. A healthy young man, employed on the London and Croydon railway. It appears that the man was engaged on the rail, when the axle-tree of one of the carriages, which was going ten miles an hour, gave way, and the train was thrown off the line, and knocked him down. He did not suffer much pain, and his pulse was

not feeble, although very frequent: he had not lost much blood. The integuments were torn off the pubic and right and left hypogastric regions: a small portion of the intestines was visible below the umbilicus: the penis was torn off from its attachment, and with the scrotum separated so as to expose the spermatic cords and testicles. The symphysis pubis was separated, and the right os pubis was fractured in several places. The integuments covering both femoral regions were extensively lacerated; the right femoral artery and vein completely truncated; and the right adductor-longus muscle severed. The head of the femur was thrown out of its socket, and was lying loose in the femoral region.

A catheter was passed, and a considerable quantity of clear urine drawn off. He was ordered stimulants. His pulse continued remarkably good for nearly three hours, but gradually became more frequent and feeble. He remained perfectly sensible, and did not suffer much. He died five hours after the accident.

CASE 8.

Wound of Abdomen—Intestine protruded and returned—Inflammatory Symptoms—Recovery.

SARAH F——, aged 14: admitted into Esther Ward, under Mr. Cooper, on August 21, at half-past three P.M. A short, stout, pallid girl, in good health. While standing on some railings gathering grapes, she slipped off, and one of the spikes entered the abdomen just above Poupart's ligament, and very close to the external ring. The wound was an inch long, and in a direction parallel to the ligament. She was taken to a surgeon, who stated that the small intestine protruded to some extent. This was returned with moderate ease, and the wound closed by two sutures and a strap of adhesive plaster: she was then sent to the hospital. On admission, her countenance was somewhat anxious: she had scarcely recovered from her partial collapse, but suffered great pain over the abdomen, which was increased by pressure; pulse quick, with a tendency to jerk, and compressible: tongue moist and clean: bowels opened. Ordered,

Hirudines xxx.; et postea Cataplasma.

Cal. gr. iv. Opii gr. i. st.

Cal. gr. iiss. Opii gr. fs. 3tis horis.

She was somewhat relieved by the leeches; and about an hour afterwards forty more leeches were ordered, and her water drawn off.

Aug. 22. Passed a good night: bowels not open. The strapping was removed, and the wound did not appear so lacerated as might have been expected.

Repet. Pil. 4tis horis.—Catapl. Lini vulneri.

She progressed favourably ; the abdominal tenderness subsided ; the wound healed up, but slowly ; and her strength became re-established. She left the hospital on September 27.

CASE 9.

*Penetrating wound of Abdomen, with protrusion of Omentum—
Peritonitis—Death.*

MARIA J——, aged 9: admitted into Esther Ward, on November 22, under Mr. Key: a dark-haired, unhealthy-looking girl: London born and bred: has not had good health, being subject to pulmonary complaints. Admitted with a penetrating wound of the abdomen, situated about two inches to the left of the umbilicus, and on a plane rather higher. About an inch of omentum protruded: and there being some difficulty in returning it, it was excised. The wound was strapped up; 24 leeches applied to the abdomen, and a cup-full of blood taken from the arm. She was very restless and uneasy throughout the day, though not complaining of positive pain.—Ordered,

Cal. gr. i. Opii gr. i. st.

Opii gr. fs. Cal. gr. ij. 4tis horis.

Nov. 23. Has been sick: pulse very rapid and small, 140: respiration hurried: tongue coated, but quite white: seems drowsy: breathing thick: abdomen rather tense, and painful on pressure: skin hot and dry. Ordered,

Enemata of castor-oil; 6 leeches; and a blister to the abdomen.

Cal. gr. i. Opii gr. $\frac{1}{4}$. Pulv. Ant. gr. ij. 4tis horis.

24. Breathing quick, and obstructed by mucus: pulse 130, and rather intermittent: face less flushed: voice clear: no sickness: abdomen tense, and painful on the least pressure: bowels not open, except by the enemata.—Ordered,

Cal. gr. fs. Opii gr. $\frac{1}{4}$. Pulv. Jacob. ver. gr. ij. st.

Ol. Terebinth. m xv. ex Mist. Salin. \mathfrak{z} i. 4tis horis.

Empl. Lyttæ abdom.

In the evening she was worse.

V. S. ad \mathfrak{z} vij.—Hirudin. xij. abdom.

The blister to be dressed with Ung. Hydrarg.

Cal. gr. ij. 4tis horis.

25. Sinking: all the symptoms increased: died in the evening, her mind remaining clear to the last.

SECTIO CADAVERIS. Nov. 26.—Abdomen rather tumid; the external wound closed. No other appearance in the lungs than cadaveric con-

gestion. Left pleura healthy: right pleura containing at least half a pint of purulent fluid; and the whole surface of the pleura pulmonalis was generally coated with inflammatory effusion of the most unorganizable kind, in some places so dense as to form a layer. On opening the peritoneum the traces of inflammation were at first not very evident. There was no injection, and the parts generally seemed anæmiated: on narrow inspection, flakes of the same greenish-yellow, cream-like, non-plastic effusion as seen in the pleura, were found studding the peritoneum in different parts; and on scraping the surface in any part with a knife fluid of a similar character was collected. The flakes were most dense in the lumbar region, and on the convexity of the liver. The omentum was found to be filling up the wound, and the muscles seemed to have closed around it and prevented its retraction. Corresponding to the external wound was a small puncture through the coat of the colon, but so minute that no extravasation could have taken place through it. A rather large and lively *ascaris lumbricoides* was found in the intestines.

[An analogous case is reported in the First Volume of the Guy's Hospital Reports, page 580; but this case fortunately recovered.]

CASE 10.

Incised Wound of Abdomen—Protruded and lacerated Colon—No urgent Symptoms—Death.

WILLIAM G——, aged 34: admitted into Lazarus Ward, on March 1, at 11 o'clock A.M., under Mr. Key. He had slept the previous night at a public-house in Tooley Street, and early this morning was found in the condition in which he was brought to the hospital. After the mutilation he had walked twice up and down stairs from the room where he slept, and got into the cab, which brought him to Guy's, without assistance. There was an incised longitudinal wound of the abdomen at the umbilicus $1\frac{1}{2}$ inch long, and from this protruded a large confused bloody mass, consisting of the whole of the arch of the colon torn away from the meso-colon, the omentum, and a considerable portion of the small intestines; the omentum was torn to shreds; and the colon also was torn in two, the ends hanging down on either side of the abdomen. The whole mass had a most offensive odour, was completely infiltrated with blood, and had evidently been exposed for several hours. There was not any thing like the collapse that might have been expected; and he seemed bordering on a state of delirium tremens. He knew nothing whatever of the cause of the injury, although he answered rationally when spoken to. Probably he had first stabbed himself with a knife, which

was found under his bed, and then torn and mangled the parts as they protruded. Some loose shreds of peritoneum and fat were cut off; the incision was enlarged downwards; and the mangled mass, after being washed and warmed, was returned, with the exception of the torn ends of the intestine, which were left out of the wound and tacked together; a piece of lint being passed under them to prevent their slipping in. The remainder of the incision was brought together by quilled suture. Brandy and beef-tea were given him, under which he rallied in the course of the day and complained of no pain, but wandered slightly in his mind, and shewed a disposition to get out of bed and to pull about the parts. In the evening some *feculent* matter had passed from the upper end of the bowel.

March 2. Much in the same state. No sickness or pain in the abdomen on pressure: not much collapse. Has passed his water freely. In the evening he was evidently sinking; and he died in the night.

SECTIO CADAVERIS.—Body stiff: the face full and red. There was no appearance of reparation about the wound, but it was dark-coloured and *foetid*. Hanging out of it were the two torn ends of the colon, which were thin, dryish, and black; and on separating the edges of the wound there was a dark sloughy cavity, larger than an egg, and formed by peritoneum. Bowels not distended. Universal peritonitis; the surfaces glued together, and vascular; but the secretion of purulent fluid was still more general. The omentum was injected, dark, contracted, and lacerable. Liver full, pale, and dull; and beneath the peritoneum it was minutely speckled, as if with *ecchymosis*. No evidence of *fecal extravasation*.

CASE 11.

Ruptured Intestine—Death in thirty hours.

H. D——, aged 34: admitted into Lazarus Ward, under Mr. Cooper, on June 30. While drawing a truck a post-chaise came in contact with it, causing the handle to be forcibly driven back against the right hypochondrium. He was bled and actively purged, and then sent to the hospital. About twenty-four hours after the injury he complained of violent pain over the whole abdomen: he vomited continually, the stomach rejecting every thing, and had no evacuation of the bowels.

Hirud. xxx. part. dolent.

Haust. Efferves. c Magn. Sulph. ziss. 2dis horis.

Cal. gr. iij. Opii gr. i. st.

He died 30 hours after the accident.

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SECTIO CADAVERIS on following day.—Surface of body exsanguine. No appearance of ecchymosis externally; but the cellular membrane beneath the injured spot was highly injected with blood. Abdomen contained two quarts of serum, very turbid, and mixed with numerous flakes of lymph. The peritoneum shewed marks of recent high inflammation, its surface being covered with much lymph: the intestines adhering in some parts. Near the upper extremity of the ileum, at that part to which the mesentery is attached, there was an opening, not so large as a sixpence, from which part of the contents of the intestine had escaped, and produced the fatal peritonitis.

CASE 12.

Ruptured Intestine—Collapse—Peritonitis—Death.

—, aged 30: admitted into Cornelius Ward, under Mr. —, on December 14, in the evening, soon after the accident. A strong, stout, healthy drayman. A barrel had fallen upon his loins and knocked him down, his abdomen probably coming in violent contact with the ground. He was somewhat collapsed, and lay on his left side, with his legs drawn up. There were marks of a blow on the loins, where he complained of pain and tenderness: the chief pain, however, was referred to the lower part of the abdomen, but there was not much tenderness: no paralysis whatever. He had voided some blood by the urethra, as appeared from the state of his shirt. He was unable to pass his water; and stated that he had for a long time had some difficulty in micturition. After considerable difficulty a catheter was introduced, and a moderate quantity of perfectly clear water was drawn off. It appeared afterwards, from the ecchymosed state of the penis, that the last inch or two of the canal had probably sustained some injury, and thus furnished the blood. He was relieved by the evacuation of his water; and as there were no very well-marked symptoms, excepting the moderate pain at lower part of abdomen and the collapse, he was ordered fomentations, and gentle stimulus if necessary. On the following morning, Dec. 15, he stated that he felt better, and, to a certain extent, he had rallied from his collapse. About 11 o'clock he requested to have his water drawn off, not having passed any since the previous night, at which time a catheter had been introduced and retained for some little time: to this he referred as the cause of the great pain which he now experienced in the lower part of the abdomen. The bladder only contained a small quantity of urine, and soon after its evacuation he suddenly and rapidly grew worse; his abdomen became swollen and tense, and he sank and died about 12 o'clock.

SECTIO CADAVERIS, Dec. 16.—Abdomen very tense from air in the peritoneal cavity. On cutting into the liver, air issued, apparently from one of the larger veins (probably the effect of early decomposition). Peritonitis with partial effusion of lymph, predominating towards left side: the omentum lacerated and ecchymosed: slight effusion of blood in the peritoneal cavity; some ecchymosed spots on the small intestines and mesentery. On the left side a bundle of small intestines, chiefly ileum, were glued together by soft effusion, produced by a rupture through which a small extravasation of the contents had taken place. In the left lumbar region and iliac fossa there was a large collection of blood effused behind the peritoneum, and a smaller effusion existed on the right side.

CASE 13.

Injury—Ruptured Intestines—Death in two days.

GEORGE P——, aged 45: admitted into Accident Ward, under Mr. Cooper, on November 3: a stout-made man: was brought in the afternoon to the hospital in a considerable state of collapse, having been knocked down by a light cart, the wheel of which had passed over the anterior part of his body. He complained of much abdominal pain; vomited a good deal; and in this evacuation, as well as in his stools, some blood was seen. He was leeches, and took some slight purgatives. Lived two days.

SECTIO CADAVERIS, six hours after death.—Still warm, but rigid. No external signs of injury, or subcutaneous ecchymosis. Abdomen tense. On opening the abdomen much foetid and apparently ammoniacal gas escaped, with a quantity of fluid, which was bloody and filmy, and tinged with fæces. Peritoneal surface highly inflamed throughout: that of the anterior parietes adherent to the intestines and omentum, but readily separable: the intestines glued together by abundant layers and cords of fibrin, plastic, and in different stages towards organization and pus. One of the foremost convolutions of small intestine (jejunum) below the level of the umbilicus was completely divided transversely: the mesentery was also fissured to some depth. The mucous membrane of the upper divided end everted all round to the extent of nearly three-quarters of an inch, tumid and vascular, very slightly constricted by the retracted muscular coat: the lower divided end was found enclosed one inch and a half deep between other convolutions: its mucous surface similarly everted, but in a less degree: both ends readily poured out their contents, and lay

glued to the adjoining parts, and opened into separate collections of bloody fæculent fluid.

CASE 14.

Ruptured Intestines—Fractured Spine and Cranium—Death in twenty-one hours.

JOHN T——, aged 36: admitted into Accident Ward, under Mr. Key, on September 22d, at 5 o'clock P.M. Had been drinking, and fell from a mast about fifty feet; but his fall had been intercepted in the descent. On examining his spine there was a distinct irregularity between the last dorsal and first lumbar vertebræ, presenting a chasm in which the finger could be placed. Had, however, neither loss of feeling nor sensation in the lower extremities, and passed his water freely: complained of no particular pain about his body or extremities, but referred all the mischief to his head. There was a contusion about the centre of the lambdoidal suture. The pupils acted naturally. He expressed himself indistinctly, and with difficulty, like a person labouring under slight concussion, or partially inebriated. He was cold and somewhat collapsed. Ordered,

Calomel; and C. C. ad ℥viij. nuchæ.

Sept. 23. Recovered somewhat from collapse, but still cold and weak: complains of general pains in back and around the umbilicus, and in head: has perfect motion and sensation in lower extremities. Continued in much the same state till about 2 o'clock P.M., when he died suddenly. His pupils were observed to become dilated before death.

SECTIO CADAVERIS, *Sept. 24.*—There was not the slightest appearance of bruise or ecchymosis on any part of the body. There was considerable effusion of blood over the surface of the sternum, and in the origin of the pectoral muscles on each side; also about the ensiform cartilage and anterior part of the origin of the diaphragm, and in the anterior mediastinum; but no fracture or injury to the thorax or its contents. The abdomen was very tense and tympanitic. On turning back the skin of the abdomen, large patches of ecchymosis were seen over the surface, between the fascia and muscles; but none between the skin and adipose layer: blood was also effused into the sheath of the recti muscles. On opening the peritoneal cavity a quantity of gas escaped; the intestines presented, in several places, extensive patches of ecchymosis, involving the whole calibre of the intestine for two or three inches. Recent peritonitis, manifested by the effusion of plastic lymph chiefly over the small intestines, some

of the folds of which were glued together. The cause of this peritonitis was discovered in two small ruptured openings in different parts of the small intestine, from which a small quantity of the contents appeared to have escaped, probably at the moment of the accident. The peritoneum around the openings was slightly adherent, by effused lymph, to the adjoining peritoneal surface; and there was a considerable quantity of plastic lymph poured in the neighbourhood of the ruptures.

On removing the scalp an extensive ecchymosis was found diffused over the back of the head: a fracture, but without any displacement, extended through the occipital bone on the left side of the median line, commencing at the lambdoidal suture and terminating at the foramen magnum: a considerable quantity of coagulated and fluid blood between the dura mater and occipital bone on the left side; also some fluid blood in the arachnoid cavity, chiefly confined to the posterior region. Extensive ecchymosis in the pia mater, and on surface of posterior lobes of cerebrum and whole of the cerebellum. A small laceration of posterior lobe of left hemisphere of the cerebrum.

On examining the spine the spinous process of the first lumbar vertebra was found broken off: the arch was also separated from the body of the bone, and the body itself fractured completely through. There appeared, however, to be no displacement of the bones, so as to produce pressure or injury to the cord.

CASE 15.

Lacerated Liver—Internal Hæmorrhage—Fractured Ribs—Death.

SAMUEL H——, aged 28: admitted into Barnabas Ward, under Mr. Cooper, on July 30. A stout, bony, well-made man. Received a blow from the point of the shaft of a chaise on the right side of the chest. It was said that a cart-wheel was at his back when the accident occurred. He was brought to the hospital in a coach about an hour afterwards, walked, with some slight assistance, to the ward, and appeared to have sustained so little injury, that the dresser at first scarcely thought it necessary to admit him. He became sick, and vomited: but complained of no great pain, and did not appear restless. He seemed at one period to rally from a state of collapse, which was not extreme; but he slowly sank, and died 11 hours after the accident.

SECTIO CADAVERIS.—The fifth to the ninth ribs on right side were fractured near their cartilages, with little or no displacement: the superficial parts were but slightly ecchymosed. The peritoneum was

bathed in blood at all points, and contained about five pints. There was a vertical rent of the liver through its whole thickness, to the left of the gall-bladder: the greater part of the torn surface was sealed by a dark tenacious clot: the structure of the liver was healthy. Kidneys healthy, slightly exsanguineous, and the right had a superficial rent on the upper part, about $1\frac{1}{2}$ inch long. Bladder contained a little clear urine.

CASE 16.

Fractured Ribs, Clavicle, and Scapula—Lacerated Liver—Death.

ISAAC P——, an Irishman, rather above the middle age, was brought into Accident Ward on August 17, having received a severe blow from a spar or mast, by which his right clavicle, left scapula, and several ribs were fractured. There was some emphysema about the upper part of the chest and neck. Respiration wholly performed by the diaphragm. He was perfectly sensible, and complained of great suffering. Countenance extremely pale, with an expression of great anxiety and distress. He died during the evening of his admission.

SECTIO CADAVERIS.—Body opened quite warm. Lungs were healthy, but completely collapsed: no wound of pleura detected.

Some blood effused in the cavity of the peritoneum and smeared over the viscera: this had proceeded from several extensive but superficial lacerations of the liver.

CASE 17.

Injury—Brought to Hospital dead—Lacerated Liver.

ROBERT C——, aged 40, was admitted on October 16: a labourer. It appears, that whilst driving a cart, the horse became restive, and struck him about his legs with the fore feet, knocking him down, and then trampling upon him: the wheel of the cart also went over the left lower ribs.

SECTIO CADAVERIS.—There was not the slightest evidence of any external bruise or injury of any kind, excepting a small ecchymosis on the inner side of the left knee. The body firm and very rigid. On opening the peritoneal cavity, a very large quantity of blood was seen occupying the more depending parts: it was very dark, and only here and there presented small, irregular, loose, black coagula; this blood had escaped from a most extensive rupture of the liver. Large openings were found in the trunks of the hepatic and portal veins;

and on injecting water into the three blood vessels of the liver it escaped the least freely from the branches of the artery; and indeed it required some force to carry it through them on to the lacerated surface.

CASE 18.

Injury to Abdomen—Ruptured Liver and Stomach, &c.

JOHN C——, aged 7: admitted into Esther Ward, under Mr. Cooper, on September 23. Was run over by an omnibus about $\frac{1}{2}$ past 3 o'clock P.M., the wheel passing over his body. The body, however, presented no particular external marks of injury. He was cold and collapsed on admission, and continued so, becoming extremely irritable and restless. Abdomen tender, but not tympanitic. Constant vomiting, the contents of the stomach being tinged with dark matter, probably blood. No urine was secreted after the accident. A few drops of opium were given him, and afterwards brandy with syrup. papav.; warmth applied; but no reaction ensued. He continued in this state till $\frac{1}{2}$ past 12 P.M., when he died.

SECTIO CADAVERIS, Sept. 25—The liver was ruptured in several places, chiefly on the under surface of the right lobe: the internal laceration of the viscus was much more extensive than the superficial breaches through its peritoneal coat. There was but little blood extravasated into the peritoneal cavity. The mucous lining of the stomach was torn off, and partly hanging in shreds from both surfaces, in a direction which seemed to mark the track of the wheel, extending nearly from the pylorus to the cardia. There was much extravasated blood behind the peritoneum, chiefly around the kidneys.

CASE 19.

Injury—Ruptured Liver—Death in eighteen hours.

WILLIAM H——, aged 20: admitted into Accident Ward, under Mr. Morgan, on November 6. A robust youth. Whilst driving a cart loaded with timber the horses ran away, knocked him down, and the wheel of the cart immediately passed over the lower part of his abdomen. He was brought to the hospital half an hour after the accident, when he appeared to be suffering severely from the effects of the injury. Countenance pallid: respiration hurried and impeded: pulse 120, feeb'e. He complained of violent pain about the abdomen.

Hirud. xxx. about the umbilicus.—Calomel and Opium.

12 P.M.: Symptoms became more urgent: the pulse was lost at the wrist: extremities getting cold. Vomiting had occurred once.

Some tincture of opium was administered, and he died the follow-

ing morning, eighteen hours after the accident. His intellects had remained undisturbed throughout.

SECTIO CADAVERIS eight hours after death.—Body still quite warm. Abdomen distended; its cavity contained about two pints of fluid blood. Liver remarkably exsanguine: a few small hard tubercles were scattered in it, chiefly about its convexity: the pons hepatis torn through; and considerable laceration of the viscus at the posterior margin. Spleen sound and contracted. Cortical part of right kidney extensively bruised. Other ecchymosed patches were found in various situations, but the most remarkable were in the cellular membrane before the bladder.

CASE 20.

Rupture of the Kidney—Death in twenty-seven hours.

BENJAMIN T—, aged 27: admitted into Barnabas Ward on December 27, about 4 o'clock P.M. He was in a state of extreme intoxication, and was said to have fallen from a gate on to the edge of a cask. He could give no distinct account of himself, but appeared to complain of pain at the lower part of the right side of the chest, where a broken rib was detected by the dresser.

Dec. 28, 1 P.M. Was still in a state of collapse: had no paralysis of his limbs; and there was no evidence of cerebral mischief: his pulse were very weak, and his countenance exsanguineous. His bowels had been freely opened, and he had passed his water. He looked like a person recovering from a severe and long-continued state of intoxication, or one who had received some visceral injury. He was perfectly incoherent, and would give no answer to questions put to him. Ordered a little wine, to be taken at intervals, and to be watched. Towards the evening he appeared to become rather more sensible, and seemed to recognise some friends who came to see him; but he died rather suddenly at 7 o'clock P.M.

SECTIO CADAVERIS, Dec. 30.—On opening the abdomen there was found in the peritoneal cavity a large quantity of dark fluid, apparently bloody serum, which had probably transuded (perhaps post-mortem) through the peritoneum, as there was no lesion of that membrane discovered. Extensive and general ecchymosis of all the viscera under their peritoneal coat, excepting the liver, which was nearly free from such extravasation. It was evident, from the appearance which the abdomen presented when opened, that an immense quantity of blood had been extravasated behind the peritoneum

lining its posterior walls, which had pushed the viscera forwards, especially on the left side, and had insinuated itself in every direction under the membrane and between the layers of all its folds and processes, through the mesentery, mesocolon, the omentum, and over the large and small intestines and stomach, so as to give to the abdominal viscera a general ecchymosed surface, which extended into the deepest parts of the true pelvis. The diaphragm, both on its thoracic and abdominal surfaces, had numerous ecchymosed patches; and there was also blood extravasated into the posterior mediastinum, and an ecchymosed patch on the base of the left lung under the pleura. Both cavities of the chest contained a quantity of bloody serum, similar to that in the abdomen. On removing the viscera from the posterior abdominal walls an enormous coagulum of blood was seen in the left lumbar region, extending from the diaphragm to Poupart's ligament, and also over the spine, in a lesser degree, to the right side. In the midst of this coagulum was the left kidney, which was completely divided transversely through its middle into an upper and lower half. No other viscus appeared to have suffered lesion. There was no external bruise on the loin, and no particular extravasation of blood between the muscles of that part. The left tenth and eleventh ribs were fractured.

CASE 21.

Blow—Ruptured Kidney—Lacerated Renal Capsule—Death sudden.

SAMUEL P——, aged 8½ years: admitted into Accident Ward under Mr. Cooper, on February 16. A tolerably healthy lad. Whilst holding the handle of a truck he was suddenly struck by it, in consequence of a waggon being driven against the truck: the handle was broken by the force. He fell against a post, arose almost directly, and ran a few yards, when he dropped. In half an hour he was brought to the hospital, cold, anxious, and complaining of pain in his abdomen: heart's action feeble. Warmth and stimuli were employed, with slight temporary success, but he died within the hour.

SECTIO CADAVERIS forty-two hours after death.—A small ecchymosed spot over the region of the liver. The cavity of the abdomen contained about a quart of blood, little clotted, and generally diffused: where flowing from between the liver and diaphragm it presented a fluid streak of whitish chyle-like matter, the source of which was not discovered. The right kidney lacerated, and its superior extremity completely separated; the right renal capsule so torn as to be with difficulty removed. Liver dark and gorged with blood at the portion corresponding with the external

ecchymosed spot. Throughout the intestinal canal the glands were largely developed. Bladder empty, and contracted.

CASE 22.

Extensive Railway injury—Ruptured Liver and Kidney.

THOMAS H——, aged 24: admitted into Accident Ward, under Mr. Morgan, on January 9. A muscular man, employed on the London and Greenwich railroad. It appears, that while the trains were in motion he was walking along the side of one of the carriages, when his foot slipped, and he fell off on to his elbow and side; but it could not be ascertained whether any carriage passed over him. He became insensible, probably from the loss of a large quantity of arterial blood: on admission, he was much collapsed, but although his pulse at first could not at all be felt, soon rallied, and did not appear to suffer much. The elbow joint was completely laid open, and the bones forming it much comminuted. There was a deep cut, three inches in length, through the temporal muscle, from which arterial blood issued. About an hour after admission there was great tumefaction below the clavicle; and in the course of another hour, after being turned on to his side according to his wish, his sufferings became most acute. He died, apparently in great agony, about five hours after the accident.

SECTIO CADAVERIS.—On the convex surface of the right lobe of the liver there was a rent three or four inches in length, penetrating deep into its structure. The right kidney was much torn, and in one place was nearly cut into two parts: from this nearly $1\frac{1}{2}$ pint of blood had been poured behind the peritoneum. Within the peritoneal cavity were eight ounces. No ribs were fractured.

CASE 23.

Fractured Vertebrae and Pelvis—Lacerated Liver, Pancreas, and Kidney—Death.

WILLIAM T——, aged 35: admitted into Accident Ward, under Mr. Cooper, November 10. A strong, healthy man; employed as a carter. While driving his cart, the horse took fright and ran away. He immediately got out, and stopped the horse, which, however, plunged and threw him down, and the cart passed over his body. He remained sensible, and was brought to the hospital. After undressing him, a quantity of bloody urine escaped, and he became very restless, calling out for his companions, and striking out with his legs. Sensation of both extremities was entirely gone, although voluntary motion was perfect.

On examination, extensive displacement was evident about the lower dorsal and upper lumbar vertebræ. His body was cold: the pupils dilated: pulse scarcely perceptible. Brandy and water was administered. In about twenty minutes he became perfectly quiet, and stated that he lived at Deptford. He died on the same day.

SECTIO CADAVERIS.—Well-developed, muscular man. A severe contusion was found in the left iliac region. On opening the abdomen its cavity contained upwards of a pint of fluid blood. The intestines, particularly the duodenum, presented an appearance of ecchymosis. The pancreas was severely bruised and lacerated; also the right kidney and posterior portion of the right lobe of the liver. The false ribs on either side were broken off close to the transverse processes of the vertebræ. Two of the vertebræ were found separated from their intervertebral substance. The os pubis of right side was fractured near symphysis, and overlapped that of the left. Bladder uninjured; and the other organs apparently healthy.

CASE 24.

Ruptured Spleen—Death.

JOHN D——, an elderly man, brought to the hospital on September 5, in a state of insensibility, and respecting whom no certain information could be obtained. It was reported that he had fallen from a coach. There was a bruise over one eye; and it was imagined that his insensibility depended on injury of the head. He once said a few words, but died the same day.

SECTIO CADAVERIS.—No injury of brain discovered. The only lesion detected was an extensive rupture of the spleen, from which a large quantity of blood had escaped into the cavity of the abdomen.

CASE 25.

Violence—Fractured Ribs—Ruptured Spleen—Lived seventeen hours.

THOMAS C——, aged 30 years: admitted into Accident Ward, under Mr. Cooper, on December 28. Had fallen from a height of forty feet, and was found to have fractured ribs on left side, fracture of left radius, and fracture of left tibia and fibula. The man's depression was considerable, and he complained of great internal suffering. Some slight reaction took place a few hours after the accident. Respiration affected: urine and fæces passed naturally. Intellectual faculties undisturbed at first. He survived 17 hours.

SECTIO CADAVERIS on same day.—External appearances were those of a vigorous man who died in perfect health. Body generally pale. A considerable quantity of deep sanguinolent serum, and several ounces of thick, dark, coagulated blood in the left hypochondrium: spleen extensively ruptured, and the lacerated edge of the capsule very much inverted. Considerable extravasation in cellular texture about both kidneys; but both these organs were healthy. Liver and stomach healthy. Lungs quite healthy, but completely collapsed. There was a small quantity of blood effused under the arachnoid in both hemispheres: it was diluted, and mixed by an increased quantity of serous effusion.

CASE 26.

Fractured Ribs—Ruptured Spleen—Lived twelve days.

THOMAS S——, admitted into Accident Ward, under Mr. Morgan, on July 17. A carriage was said to have passed over his body, and occasioned fracture of three ribs on left side. He lived twelve days, and complained of pain in abdomen; but stated himself to be better just previous to the sudden collapse, which in a few hours terminated his life.

SECTIO CADAVERIS.—Nothing particular with regard to the external appearances. The fractured ribs presented no indication of an attempt at union. A considerable quantity of bloody serum escaped from the abdomen, and the peritoneal surface was generally stained with it. On examination, it was found to have proceeded from the spleen, which was extensively ruptured, and its tunic distended with a large coagulum.—See Prep. 2019⁵⁰, Drawing No. 353. It appeared that the effects of the accident had been limited by adhesions to the neighbourhood of the spleen, as evinced by the shreds of stained lymph and coagula.

CASE 27.

Ruptured Spleen and Bladder—Lived two days.

ANN F——, aged 9: admitted into Esther Ward, under Mr. Cooper, on October 8. On the 7th instant a cart or waggon-wheel passed over her body. She was in great suffering, which prevented any minute examination being made. Bloody urine was drawn off by the catheter. She was sensible till the morning of the 9th, when she died.

SECTIO CADAVERIS.—Body inspected quite warm. The left os pubis

was fractured about an inch from the symphysis, and the neck of the right femur broken just within the capsule. Spleen ruptured; and the hæmorrhage proceeding from it had bathed all the viscera. Urinary bladder ruptured in three places.

CASE 28.

Ruptured Bladder—Death.

J—H—, aged 42, an attorney's clerk, married, and residing in the Borough, was admitted into Accident Ward, under Mr. Key, Dec. 26, 1843, a waggon having passed over his body. He was of middle height, with dark hair and eyes, and rather muscular. General health good, but his habits were very intemperate. While much intoxicated he reeled into the road, and falling on his back, the wheel of a large empty waggon passed over the lower part of his abdomen, his bladder being probably much distended at the time, as a consequence of his drunkenness. He was immediately (at 5 P.M.) brought into the hospital, not complaining of pain, but so violent and noisy from intoxication that it was necessary to tie him down in his bed. There were no external marks of injury; but, on examination, the fifth and sixth ribs of the left side were found to be fractured about their middle. On learning the nature of the accident, immediately on the patient's admission a catheter was passed, without any difficulty, into his bladder, and about an ounce and a half of bloody urine was drawn off. As soon as he had become quiet and tractable he was placed in a warm bed, and hot bottles applied to his feet, &c., as he complained much of cold. It was discovered that he had no power to pass his urine, although no stricture existed in the urethra, and the catheter met with no obstruction of any kind. The functions of all the other viscera were intact. The patient had had a cough for some years, which was habitually aggravated in the winter.

On the 27th, early, he was very restless and low, having had no sleep during the previous night. At 10 A.M., his extremities felt cold: he complained of great tenderness over the lower part of the abdomen, which was tense and distended. He was much relieved by a catheter being introduced into the bladder, and about a pint and a half of fluid drawn off, consisting more of uncoagulated blood than urine, and as dark in colour as treacle. He suffered much from severe spasmodic pains in the chest, especially on the left side and in the left shoulder. Ordered,

An enema of house medicine immediately.

Calomel and opium, of each a grain every three hours.

At 5 P.M. he was again suffering greatly from tension and tenderness in the abdomen ; and another pint and a half of blood and urine, of the same character as that removed in the morning, was drawn off.

At 10 P.M. he was in much pain, owing to tension *over* the bladder : a catheter was introduced, but no urine followed, the bladder appearing to be distended with coagulated blood : pulse small, running, irregular, 140 : extremities cold : skin moistened with cold and clammy perspiration.—Ordered Tinct. Opii ʒss. st.

28. Has been very restless and in great pain during the night : had no sleep. At 5 A.M. a catheter had been passed, but only about a table-spoonful of blood could be drawn off. The tinct. opii was repeated. Is constantly sick, and rejects every thing. There is less tension in the abdomen : the tenderness, also, is less, but seems more generally diffused, and is now greatest in the left lumbar region : pulse soft, small, and very feeble, but more regular, 112 : tongue moist : skin moist and rather cool : hands very cold : feet kept warm by hot bottles. He feels very low. Considerable ecchymosis exhibited itself in the integuments over the whole of the left femoral region, but none at all over the abdomen.

At 1 P.M. a catheter was passed, and about a pint and a half of blood and urine drawn off. Ordered,

Soda-water and brandy.

Alum gr. xv. ex Julep. Menth. 3tis horis.

The patient remained in the same condition for several hours, gradually sinking. The pain increased in severity, until it seemed to be beyond his endurance. Hot fomentations were applied to his abdomen, but without giving much relief. An elastic catheter was retained in the bladder, but no fluid of any kind came away. Vomiting became nearly incessant : the trunk and extremities cold, and covered with a clammy sweat. During the last two hours his breathing was much impeded by a sense of "stiffness" and suffocation in the throat. The mouth filled with a fluid, which frothed copiously from his lips : speech gradually failed, though he remained perfectly sensible to the last. Expired at 10 P.M., just 53 hours after the accident.

SECTIO CADAVERIS, fifteen hours after death.—On opening the abdomen between three and four pints of nearly pure, uncoagulated blood were found effused into the cavity of the peritoneum. In the upper and posterior part of the bladder, which was firm and contracted, there was a transverse rent, extending also through its peritoneal covering. Clots of blood plugged the mouths of the lacerated vessels, and there was *no*

extravasation of blood into the cellular tissue of the pelvis. A little ecchymosis appeared beneath the peritoneum over the lumbar vertebrae on the left side. The kidneys and ureters were sound: the liver unhurt, pale, and mottled. The bony pelvis was not in any way injured. As has been stated, the fifth and sixth left ribs were fractured; but the pleura was not lacerated, nor had the lungs sustained any injury.

CASE 29.

Ruptured Bladder—Fractured Pelvis.

ANN E. W——, aged 38: admitted under Mr. Cooper, into Esther Ward, on Sept. 18. A fine, well-made married woman. While in a state of intoxication she was run over by a cart, and was brought to the hospital, at 5 o'clock A.M., half an hour after the accident. There was then general pallor of countenance, sunken features, cold extremities. Pulse quick and feeble: body covered with cold clammy perspiration: intense pain in hypogastric region, with discolouration of the skin: inability to move the lower extremities, and great pain when the right leg was moved. Warmth applied.

About 9 o'clock A.M. a quantity of ammoniacal bloody fluid was found to issue from the vagina: she was in great pain, and it was impossible to examine her. Stimulants were freely given, as she was very prostrate. A catheter was passed at 1 o'clock, but merely three or four drops of bloody urine came away. She rallied somewhat and was enabled to give an account of the accident, but never recovered from the collapse, and died at a quarter to ten the same evening.

SECTIO CADAVERIS, thirty-nine hours after death.—Groin and parts about the pubes much swollen, emphysematous, and green. Both ossa pubis fractured, the symphysis loose, and also the right sacro-iliac joint. A great quantity of discoloured serum in the peritoneum. Large rupture of the bladder at its superior and anterior portion, including the peritoneum. Decomposition of the viscera much advanced.

CASE 30.

Injury to Pelvis and Abdomen—Death.

JAMES D——, aged 27: admitted into Cornelius Ward, under Mr. Key, on August 19. A stout, healthy man: unmarried: a labourer on the Greenwich Railway. Had been first struck by the buffer of the Brighton engine, and then probably received a second blow on the pelvis by some projecting part of the train. When brought to the hospital the greater part of the small intestines were protruded

through a transverse laceration about seven inches long, which had separated the larger part of the wing of the left ilium from the pelvis, a little above the acetabulum, and laid open the whole of the iliac fossa. The separated portion of ilium was drawn up by the muscles close to the ribs, leaving a wide interspace through which the bowels protruded. There was considerable hæmorrhage and he was in a state of collapse. He had also sustained a severe laceration of the scalp and was otherwise much bruised. Brandy was given him and the intestines returned: the wound was sewed up, and over this was placed compress of lint and plaster. Ordered,

Tinct. Opii. m xxx. st.

Had passed his water just previous to the accident, and the catheter now drew off a small quantity of *clear* urine.

9 o'clock. Had not rallied: in cold sweat: complained of great pain: constriction and fullness of abdomen about the seat of injury. One of the stitches had given way, and the intestine slightly protruded: it was returned, and the wound closed. Ordered,

Opii gr. ij. st.

Died at half-past ten the same evening.

CASE 31.

Extensive Injury to Pelvis, from Machinery—Death.

WILLIAM B——, aged 13: admitted into Accident Ward, on January 11, under Mr. Morgan. A strumous lad. It appears that while he was turning a grinding-stone at the steam saw mills the handle came off, and, striking his chest, threw him back into a hole in the floor, in which a large fly-wheel, communicating by means of a broad leathern strap with steam machinery in another room, was revolving. He was caught by the strap between the legs, and in this position the wheel made nearly half a revolution with him, and dropped him on the other side. When taken up he was insensible, and appeared to have lost a good deal of blood. He was immediately brought to the hospital in a state of profound collapse. An extensive but superficial wound extended from the anterior and superior spine of left ilium along Poupart's ligament as far as the anus: the testicles and penis completely denuded: the pelvis was fractured in several places, especially in front. Stimulants were administered, and in half an hour he sufficiently recovered to be enabled to answer questions put to him. He did not complain of much pain, but wished to be turned on his side, and seemed then in great agony. He again sank into a deep collapse, and died three hours after the accident.

No inspection could be obtained.

CASE 32.

Fractured Pelvis—Urine Bloody—Death.

WILLIAM G——, aged 17 : admitted into Cornelius Ward, under Mr. Key, on January 5. A rather delicate lad. Had fallen from the shaft of a waggon, the wheel of which passed obliquely over his pelvis. He was brought to the hospital in a state of collapse. The pelvis was completely crushed, and the lower extremities entirely paralyzed. General tumefaction of the abdomen. The catheter was passed, and dark-coloured urine mixed with clots of blood was drawn off. Stimulants were freely administered, but he never rallied, and died early the following morning.

No post-mortem examination could be obtained.

CASE 33.

Injury to Pelvis—Death.

CHARLES M——, aged 65 : admitted into Accident Ward on Feb. 15. The wheel of a waggon had passed over him, and he was supposed by the dresser to have a fractured thigh. He passed some bloody urine ; and died on the 18th.

SECTIO CADAVERIS.—The thigh was not broken, but the head of the bone had been driven into the pelvis through the foramen ovale, extensively fracturing the pubes and ischium. There was a good deal of ecchymosis behind the peritoneum over the lower part of the abdomen. The bladder was contracted and contained, a little bloody fluid : around it was a turbid, offensive sanies.

CASE 34.

Rupture of the Bladder.

J. H——, aged 42, admitted into Cornelius Ward December 26, in the evening. He had been knocked down by a waggon, while in a state of intoxication, and the wheel appeared to have passed over his pelvis. He complained of pain about the lower part of his belly, and was very violent and excited. The left groin and upper part of the thigh were severely ecchymosed ; but his condition prevented any accurate examination of his person. A catheter was passed, which withdrew some urine tinged with blood ; and a few hours afterwards a large quantity of nearly pure blood was obtained.

July 27, 11 A.M. Complained of intense pain diffused over the pelvis, abdomen, and chest, aggravated by the slightest motion of the

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body, although he could move his arms freely; breathed with difficulty; general distress and extreme irritation. Had passed no water since the accident, and there was a considerable distention over the region of the bladder. The catheter again brought away a large quantity of pure blood. Some difficulty was experienced in introducing the instrument, and it seemed to hitch against some obstruction just as it entered the bladder; but as soon as this was overcome the blood flowed freely. Ordered, calomel and opium, of each a grain, to be repeated at intervals. An enema to relieve the bowels, which had been constipated previously to the accident.

4 P.M. The pills have been twice repeated, and his bowels have been opened by the injection. His symptoms unrelieved: bladder apparently distended: belly full, and somewhat tense. A large quantity of blood was again drawn off, and some relief was afforded. Ordered, infusion of roses with sulphate of magnesia and tinct. ferri sesquichlor. m xv. every three hours.

10 P.M. No relief from his sufferings: cold and collapsed, with weak thready pulse: belly tympanitic. A catheter was passed, but no fluid obtained: the instrument seemed to enter an empty bladder. Ordered, tinct. opii m xxx. stat: brandy at intervals.

Dec. 29, 9 A.M. Had slept at intervals during the night, and appeared to be altogether easier: bowels had been opened: belly less tympanitic and swollen: great thirst; but rejects every thing that he swallows. The catheter was passed, but brought nothing away. To discontinue his medicine, and to be kept perfectly quiet. About 2 o'clock P.M. the catheter was introduced, and brought away a small quantity of blood and urine. Brandy and soda-water was given him, but was not retained on his stomach. In the evening a mustard poultice was applied over the scrobiculus cordis, and thirty drops of tincture of opium given. He died at 10 P.M.

SECTIO CADAVERIS, Dec. 29.—The bladder, which was perfectly contracted and drawn up behind the pubes, presented a large rent in its posterior wall, through which the contents, (and it was probably distended with urine at the time of the accident) had doubtless passed into the peritoneal cavity. This lesion of the bladder had evidently furnished the hæmorrhage; and as the viscus had remained in a state of permanent contraction after the injury it would seem that the catheter, at each introduction, had passed through the laceration into the recto-vesical pouch, where the subsequent accumulation of blood and urine took place. The peritoneal cavity contained about a pint and a half of blood and fluid, which latter was probably partly urine and

partly the effused product of inflammation. There was but little evidence of active or diffused peritonitis, which may perhaps be ascribed to the dilution of the urine with a large quantity of blood. Some of the lower ribs were broken on the left side, and there was moderate pleuritis in the neighbourhood of the fracture.

AN ABSTRACT OF THE TWO HALF-YEARLY REPORTS
OF THE
CLINICAL SOCIETY,
FOR 1843.

BY EDMUND LLOYD BIRKETT, M.B.

It will be our endeavour to embody, in the few following pages, an abstract of the two Half-yearly Reports of the Clinical Society for the year 1843. We had at first intended to have published these Reports entire; but in consequence of the great length to which they run, and also the enumeration of a number of details, essential in their character as Reports of a Society, but unnecessary, and, except to a few, void of interest in a general publication, we have preferred the present plan.

To enable our readers to form a conception, and determine the value of the facts we have here brought forward, it is necessary that they should understand the general object of the Reports, and the principle on which they are formed. They relate directly to the economy of the Society; and are intended mainly to attract the attention of students to the absolute necessity of Clinical study, and to impress on their minds the opinion of Sydenham, "*hanc artem (medicinam,) haud rectius perdiscendam esse, quam ab ipsius artis exercitio et usu.*" And more remotely they are designed as instruments for rendering available, by means of indices and classification, the large collection of matter recorded in the books of the Society.* Such being the object of the formation of the Report, it has generally been endeavoured to comprehend within it a slight sketch of the progress of the Society, notices of alterations, and suggestions for future improvement; but the substance of the Report consists of a digest of all the cases, with their results, entered in the books of the Society during the foregoing six months, classified according to a nosological plan, and tabularly arranged, as follows:

* Introduction, Vol. I. Second Series.

No.	Name & Age.	Ward and No.	Physician or Surgeon, and Reporter.	Date of Admission, and Duration of Illness.	Residence and Occupation.	Disease.	Date of Exit.	Reference to Clinical Books.	Result.
166.	SARAH SNELL. Aged 45.	Charity. 10.	Dr. Babington. Mr. Parkinson.	June 7, 1843. 6 months.	Croydon. Monthly Nurse.	Ascites, of six months' duration; bilious vomiting; pain on right side of abdomen, excruciating on defecation; fluctuation; tympanites; tongue with brown coating; July 7th, Paracentesis abdominalis.—17th, Jaundice.—21st, convulsions; prostration.	July 21, 1843.	Formulse, D. 57.	Death. No Autopsy.

and appended there is an analytical index of symptoms, classified according to the same plan as the digest of cases.

Now we propose to omit every thing bearing reference to the economical discipline of the Society, and to give our chief attention to the seventh and last columns, in which are comprehended the nature of the disease, and the result; and only to refer to the other columns for information when the subject we wish to elucidate particularly demands it. But in so doing, we would not wish it to be understood that we do not duly estimate the importance of age, season, residence, occupation, and time, both in producing and modifying disease; but rather that we are of opinion that it is only from very large and accurate collections of reports that deductions can be made without endangering science by premature generalization.

The Half-yearly Report, then, independently of the introduction, consists of the digest of cases and analytical index; and upon these two separate portions we have drawn up the following tables. The first, or General Table of Results, gives the terminations in all the reported cases under four different heads, distinguishing the medical from the surgical, and the male from the female patients; and to this succeed fourteen smaller tables, deduced from the analytical index, and affording the results in the different sections of the primary divisions. At the foot of each table is given the per centage of the number cured, relieved, unrelieved, not noticed, and dead; and these again are brought together in a separate table, and the average per centage taken, and compared with that in the General Table of Results.

GENERAL TABLE

PRIMARY DIVISIONS.		Cured.				Relieved.			
		Medical.		Surgical.		Medical.		Surgical.	
		M.	F.	M.	F.	M.	F.	M.	F.
A.	Injuries and Diseases of Brain and Nervous System	28	30	17	3	20	10	1	..
B.	Injuries and Diseases of Lungs and Appendages ..	29	20	..	..	25	4	..	1
C.	Injuries and Diseases of Organs of Circulation . . .	3	8	9	3	6	4	1	4
D.	Injuries and Diseases of Organs of Digestion.....	32	19	13	9	12	8	5	2
E.	Injuries and Diseases of the Integuments	21	13	83	45	2	4	8	10
F.	Diseases of the Lymphatic System.....	..	..	28	8	..	..	3	1
G.	Diseases of the Urino-Genital System.....	13	16	129	17	6	9	29	2
H.	Injuries and Diseases of the Organs of Locomotion	41	23	106	38	10	6	12	11
I.	Injuries and Diseases of the Eye and Appendages	1	..	37	25	1	..	25	14
K.	Fevers.....	59	85	..	..	4	1	..	..
L.	Poisons	6	1	2	2	5	..	..	..
M.	Operations for Deformity .....	..	..	4	..	..	..	1	..
Total Results of Males and Females.....		233	165	428	150	91	46	85	45
Total Results of Medical & Surgical Cases.....		398		578		137		130	
Total Results..		976				267			
Per Centage		65.371				17.882			

RESULTS.

Unrelieved.				Not Noticed.				Dead.				Total.				Total.		GENERAL TOTAL.
Medical.		Surgical.		Medical.		Surgical.		Medical.		Surgical.		Medical.		Surgical.				
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
11	..	4	..	1	..	..	..	11	3	8	1	71	43	30	4	101	47
15	1	..	..	2	..	..	..	12	8	3	..	83	33	3	1	86	34
2	4	..	..	2	..	..	1	6	3	..	..	19	19	10	8	29	27
5	1	1	2	..	1	2	..	9	5	..	1	58	34	21	13	79	48	
1	..	1	1	1	..	1	..	1	1	4	3	26	18	97	59	123	77	
..	..	..	1	..	..	2	..	..	..	..	..	..	..	33	10	33	10
3	7	10	2	..	..	3	2	10	5	8	1	32	37	179	24	211	61
..	..	3	7	1	..	..	1	..	1	9	4	52	30	130	61	182	91
..	..	10	3	..	..	4	4	..	..	..	..	2	..	76	46	78	46
1	..	..	..	..	1	..	..	5	1	..	1	69	38	..	1	69	39
..	..	..	..	..	..	..	..	..	..	1	..	11	1	3	2	14	3
..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	..	5	..
38	13	29	16	7	2	12	8	54	27	33	11	423	251	587	232	1010	483	
51		45		9		20		81		44		674		819		1493		
96				29				125				1493						
6-429				1-935				8-372				99-989						

This table gives the results in 1493 cases reported for the Clinical Society during the year; while the whole number admitted into the hospital during the same period was 3755 : thus 2260 cases are left without notice. From this great difference it may be surmised that the selection has been made according to certain regulations; and the value to be attached to the results must vary in proportion as these are influenced by such regulations. But the deficiency in the number of the cases reported does not arise from any such selection, but from the failure of certain reporters in the discharge of their duties, in consequence of being suddenly called to other fields of action, without either completing their cases themselves, or being enabled to find substitutes. And indeed, on comparing the number of deaths in the cases reported and in those admitted, we find the relation sufficiently close to justify us in claiming a similar value for the other results. Thus we observe that there were in 1843,

Cases admitted 3755; out of which 323 or 8·6 per cent. were fatal.

Cases reported 1493; out of which 125 or 8·37 per cent. were fatal.

We here see that the per centage in both instances is almost identical; indeed it is rather higher in the admissions than in the reports, contrary to what might have been expected had any selection been made, either in conformity with any regulation of the Society or with the inclination of the reporter; for both the officers of the Society and the reporter would most probably, under any such circumstances, rather employ their energy on cases in which a fatal termination would afford an opportunity of completion by the addition of the necroscopic examination, than on those in which so valuable an addition would be wanting.

We will now pass to the secondary tables, which are, as it were, separate expansions of the primary tables. But we must here repeat that these tables are formed from the analytical index of symptoms, in which cases are classed, according to the notice of them in the digest, under one or more heads; and thus will be found to arise the difference between the sum total of the general table and the aggregate totals of the secondary tables. We must also premise that we do not presume to offer the plan on which the subdivisions are

made as a nosological specimen, but only as that best adapted to the cases themselves. A larger number of cases would perhaps demand a further division, as, by a less number, condensation might be required.

(A) INJURIES AND DISEASES OF THE BRAIN AND NERVOUS SYSTEM.

SUBDIVISIONS.	Cured.		Relieved.		Un-relieved.		Not noticed.		Dead.		Total.		GENERAL TOTAL.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Injuries	18	3	3	..	1	1	..	..	9	1	31	5	36
Congestion and Inflammation	23	4	11	..	4	1	..	..	18	5	56	10	66
Mania .....	..	1	..	..	..	..	..	..	..	..	..	1	1
Delirium Tremens	2	..	..	..	..	..	..	..	1	..	3	..	3
Apoplexy and Paralysis	14	3	18	3	8	1	..	..	11	4	51	11	62
Spasmodic Diseases :													
Tetanus	1	..	..	..	..	..	..	..	2	..	3	..	3
Epilepsy	2	5	1	3	3	..	..	1	3	..	9	9	18
Chorea	4	11	1	1	..	..	..	..	..	..	5	12	17
Hysteria .....	..	23	..	8	..	6	..	..	..	..	..	37	37
Convulsions	1	1	1	..	..	..	..	..	7	1	9	2	11
Nervous Irritability	10	4	3	1	3	2	..	..	..	..	16	7	23
Total Results of Males & Fem.	75	55	38	16	19	11	..	1	51	11	183	94	277
Total Results	130		54		30		1		62		277		
Per Centage	46.931		19.494		10.83		.361		22.382		99.998		

In the foregoing table, all the terms are sufficiently intelligible, excepting, perhaps, that of "nervous irritability;" under which head has been classed cases of hypochondriasis, and those affections of the nervous system dependent on privation, for a long period, of one or more of the general necessities of life, yet not to so great extent as to develop any

specific disease. Among the cases of interest in this division are three of tetanus; one idiopathic, the second traumatic, and the third in the form of opisthotonos—a symptomatic indication of poisoning by the oil of bitter almonds. In the two first cases the extract of Indian hemp (*cannabis indica*) was administered, under the direction of Dr. Babington—in one case to the extent of 248 grains; but in both without success. Among the deaths are classed many cases of albuminuria, a disease so often fatal by coma or convulsions.

(B) INJURIES AND DISEASES OF THE PULMONARY SYSTEM.

SUB-DIVISIONS.	Cured.		Relieved.		Un-relieved.		Not noticed.		Dead.		Total.		GENERAL TOTAL.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Injuries	5	..	1	1	..	..	..	..	2	..	8	1	9
Pleuritis and Pneumonia ...	24	5	7	2	..	1	1	..	10	4	42	12	54
Bronchitis and Emphysema ...	42	28	13	4	7	1	1	1	10	2	73	36	109
Asthma	1	2	..	1	2	..	..	..	1	1	4	4	8
Laryngitis	1	1	1	..	1	..	..	..	1	1	4	2	6
Phthisis	4	4	12	1	9	2	1	..	12	6	38	13	51
Hæmoptysis	5	3	7	2	5	2	1	..	2	3	20	10	30
Total Results of Males & Fem.	82	43	41	11	24	6	4	1	38	17	189	78	267
Total Results	125		52		30		5		55		267		
Per Centage	46·816		19·475		11·235		1·872		20·599		99·997		

We have here classed pleuritis and pneumonia, and bronchitis and emphysema together, because that, in the cases under review, the connection was too close to admit of separation, without, at the same time, destroying the practical analogies which it is one of the chief objects of these Reports to establish. The deaths and the indefinite results—as, relief and no relief—are in this division, from the nature of the cases it com-

prehends, almost necessarily numerous. The injuries referred to are, cut-throat and wound of lung by fractured ribs. Among the points of interest may be mentioned three cases of paracentesis thoracis, alluded to again in a subsequent part of this Report; a case of tracheotomy for croup, classed, not quite correctly, under laryngitis; the observed connection of herpes labialis and jaundice with pneumonia; and of a "joyful" delirium with the close of phthisis.

(C) INJURIES AND DISEASES OF THE ORGANS OF CIRCULATION.

SUB-DIVISIONS.	Cured.		Relieved.		Un-re- lieved.		Not Noticed.		Dead.		Total.		GENERAL TOTAL.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Injuries.....	1	..	..	..	..	..	..	..	1	..	2	..	2
Diseases of Pericardium	4	3	1	1	..	..	..	..	5	1	10	5	15
Heart and Aorta	10	2	8	6	3	2	2	..	7	3	30	13	43
Aneurism.....	4	1	1	..	2	..	..	..	1	1	8	2	10
Veins:													
Inflammation.....	2	..	..	1	1	..	..	1	..	1	3	3	6
Varix.....	1	3	..	4	..	..	..	..	..	..	1	7	8
Thrombus.....	1	1	..	..	..	..	..	..	..	..	1	1	2
Capillaries:													
Anæmia and Chlorosis....	..	13	..	1	..	2	1	1	..	..	1	17	18
Dropsies.....	31	8	17	9	6	7	1	..	27	9	82	33	115
Hæmorrhages.....	22	24	15	13	9	5	1	1	4	4	51	47	98
Total Results of Males & Fem.	76	55	42	35	21	16	5	3	45	19	189	128	317
Total Results	131		77		37		8		64		317		
Per Centage.....	41·324		24·29		11·671		2·523		20·189		99·997		

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(C¹) HÆMORRHAGES.

SUB-DIVISIONS.	Cured.		Relieved.		Un-re- relieved.		Not Noticed.		Dead.		Total.		GENERAL TOTAL.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Traumatic.....	6	3	1	..	..	..	..	..	1	..	8	3	11
Epistaxis.....	4	3	3	1	..	1	..	..	..	..	7	5	12
Aural.....	2	..	..	..	..	..	..	..	..	..	2	..	2
Hæmoptysis.....	5	3	7	2	5	2	1	..	2	3	20	10	30
Hæmatemesis.....	..	7	1	3	..	..	..	1	1	..	2	11	13
Melæna.....	..	..	..	1	2	1	..	..	..	1	2	3	5
Menorrhagia.....	..	6	..	5	..	1	..	..	..	..	..	13	12
Hæmorrhoids.....	5	2	3	1	2	..	..	..	..	..	10	3	13
Total Results of Males & Fem.	22	24	15	13	9	5	1	1	4	4	51	47	98
Total Results.....	46		28		14		2		8		98		
Per Centage.....	46.938		28.571		14.287		2.02		8.163		99.979		

(C²) DROPSICAL EFFUSIONS.

SUB-DIVISIONS.	Cured.		Relieved.		Un-re- relieved.		Not Noticed.		Dead.		Total.		GENERAL TOTAL.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Anasarca.....	21	5	11	6	5	6	..	..	14	4	51	21	72
Hydrothorax.....	2	2	1	..	..	..	1	..	5	..	9	2	11
Ascites.....	5	1	1	2	1	1	..	..	7	2	14	6	20
Hydrops Pericardii.....	..	..	1	..	..	..	..	..	..	..	1	..	1
Tunic. Vaginalis....	3	..	3	..	..	..	..	..	1	..	7	..	7
Ovarii.....	..	..	..	1	..	..	..	..	..	3	..	4	4
Total Results of Males & Fem.	31	8	17	9	6	7	1	..	27	9	82	33	115
Total Results.....	39		26		13		1		36		115		
Per Centage.....	33.913		22.608		11.304		.869		31.304		99.998		

In these tables the difficulties so generally experienced in all attempts at classification have been much felt. We have here, under "affections of the capillaries" placed anæmia, chlorosis, and dropsy; all of which ought, perhaps, more correctly to be considered as diseases of the blood, and can only be permitted a place in this category by extending the term of "capillaries," and making it comprehend their contents also. The three diseases have, again, a more remote relation—*anæmia* and *chlorosis* with nutrition, the one through the medium of the digestive, the other through that of the uterine system; and *dropsy* with any cause of obstruction, whether situated within or without the organs of circulation. On these grounds a different arrangement might be advocated; according to which *anæmia* would be classed with diseases of digestion, and *chlorosis* with those of the uterine system, of which it is so frequently a constitutional indication. But we consider that, by following a physiological rather than a nosological arrangement, a wider system of analogies will be established; and for this reason, also, we have preferred placing *hysteria* among diseases of the nervous, rather than of the urino-genital system. We have given supplementary tables of *hæmorrhages* and *dropsies*. Under the latter are included more than half the fatal cases in the whole division; and of these a large proportion is due to the subdivision "*anasarca*," which of necessity contains most of the cases of *albuminuria*; and hence the explanation of the fatality. Under *hæmorrhages*, in the subdivision "*traumatic*," are placed the cases of secondary *hæmorrhage* after operation. The subdivision "*aneurism*" contains ten cases, seven of which were between the ages of 32 and 40; one at 52; one at 60; and a suspected case at 50. The *aneurism* was *aortic* in 4 cases, one of which was not correctly ascertained; in 2 *abdominal*; and in 4 *popliteal*; and the ages and occupation were as follow:—

Kind of Aneurism.	Age.	Occupation.	Kind of Aneurism.	Age.	Occupation.
Aortic . . .	32 ..	Coal-porter.	Abdominal . .	30 ..	Mar rd . female
— . . .	38 ..	Stone-mason.	Popliteal . .	30 ..	Shoemaker.
— . . .	52 ..	Stone-mason.	— . . .	30 ..	Porter.
— . . .	50 ..	Mar rd . female.	— . . .	35 ..	Waterman.
Abdominal . .	40 ..	Shoemaker.	— . . .	60 ..	Railroad lab ^r .

Of the cases here reported, above 40, was one female fifty years of age, in whom the disease was only suspected; a stone-mason 52 years of age, a resident out of London; and a railroad labourer 60 years of age, who traced his complaint to an accident he had but a short time previously received.

(D) INJURIES AND DISEASES OF THE DIGESTIVE ORGANS.

SUB-DIVISIONS.	Cured.		Relieved.		Un-re- lieved.		Not noticed.		Dead.		Total.		GENERAL TOTAL.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Mouth and Throat:													
Injury	1	..	..	..	..	..	..	..	..	..	1	..	1
Ptyalism	2	2	..	..	..	..	..	..	1	..	3	2	5
Disease of Labial Glands. ....	..	1	..	..	..	..	..	..	..	..	..	1	1
Hare-Lip .....	..	1	..	..	..	..	..	..	..	..	..	1	1
Epyulis .....	..	1	..	..	..	..	..	..	..	..	..	1	1
Inflammation & Ulceration	28	30	5	6	1	1	..	1	..	..	34	38	72
Cancrum Oris	1	..	..	..	..	..	..	..	..	..	1	..	1
Cancer. Labii	2	..	..	..	..	..	..	..	..	..	2	..	2
Stricture of Oesophagus .....	..	1	..	..	..	..	..	..	..	..	..	1	1
Stomach and Intestines:													
Injury	1	..	..	..	..	..	..	..	..	..	1	..	1
Dyspepsia	6	6	6	5	2	1	..	..	..	..	14	12	26
Colic	2	..	..	..	..	..	..	..	..	..	2	..	2
Hernia	1	2	..	..	2	3	1	..	..	1	4	6	10
Dysentery & Diarrhoea ...	23	19	6	6	10	11	..	1	1	2	40	39	79
Hæmorrhoids	5	2	3	1	2	..	..	..	..	..	10	3	13
Fistula in Ano	5	1	..	..	..	..	..	..	..	..	5	1	6
Prolapsus Ani	3	1	..	..	..	..	..	..	..	..	3	1	4
Contractio Ani	1	..	..	..	1	..	..	..	..	..	2	..	2
Worms	1	..	..	..	1	..	..	..	..	..	2	..	2
Scirrhus Pylorus .....	..	..	..	..	..	..	..	..	3	1	3	1	4
Rectum .....	..	..	..	1	..	..	..	..	..	..	..	1	1
Icterus and Hepatic													
Disease	8	11	7	3	2	5	..	..	6	2	23	21	44
Peritonitis	2	..	..	1	1	..	..	..	3	2	6	3	9
Ascites	5	1	1	2	1	1	..	..	7	2	14	6	20
Tumors: Splenic, &c.	3	1	1	2	2	1	..	..	..	..	6	4	10
Total Results of Males } and Females	100	80	29	27	25	23	1	2	21	10	176	142	318
Total Results	180		56		48		3		31		318		
Per Centage	56.603		17.61		15.094		.943		9.748		99.998		

This division is necessarily much extended, and the instances of the separate affections frequently few. The injury referred to at the head of the table was an incised wound of the palate, accompanied with much hæmorrhage. The case of cancrum oris was the result of poisoning by syphilis and mercury, in a man twenty-nine years of age. The patient, with stricture of the œsophagus, was supposed, at one time during her treatment, to have owed her symptoms to the presence of an aortic aneurism: the œsophagus admitted, without difficulty, the passage of the instrument; and the patient left the hospital, after an illness of four months, in good health. Among the ten cases of hernia, there was but one requiring operation; which, however, terminated fatally on the third day. It might be here suggested, that the fatality after the operation, in cases of hernia, is in some degree owing to the late period at which patients are sent to the hospital; for it has been observed, that when the patient has been admitted soon after the occurrence of strangulation, reduction has been more easily effected; and even when the operation has been necessary, it has not in general been attended with the like danger. In one of the cases of scirrhus pylorus, the *fel. bovinum* was administered, but without relief. Among the cases of dysentery was one in which the disease was accompanied with much depression of the nervous system: the patient had been employed in a gunpowder manufactory, and attributed his complaint to the effect of his occupation, having observed that his fellow-labourers were often similarly affected. Among the cases of ascites, nine were fatal; and of these, five had been subjected to the operation of paracentesis. The percentage of the different results offers little matter for consideration: that of the deaths is slightly above the general average. The number of cases cured is below the average, but the number of those unrelieved much above it; which is owing to the experienced chronicity of so many of the diseases, arising from lesions of the organs of digestion.

(E) INJURIES AND DISEASES OF THE INTEGUMENTS.

SUB-DIVISIONS.	Cured.		Relieved.		Un-re- lieved.		Not noticed.		Dead.		Total.		GENERAL TOTAL.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Injuries: Contusion	14	1	1	..	..	..	..	..	1	..	16	1	17
Wounds	35	10	5	..	3	1	..	..	1	..	44	11	55
Burns and Scalds	2	3	..	..	..	..	..	..	..	1	2	4	6
Emphysema	3	..	..	..	..	..	..	..	2	..	5	..	5
Inflammation & Congestion, Simple:													
Eruptions	31	19	2	4	2	..	2	..	2	2	39	25	64
Phlegmon & Suppuration	22	15	2	3	3	2	1	..	2	..	30	20	50
Ulceration	19	11	2	4	1	1	..	..	1	..	23	16	39
Sloughing	12	4	1	1	..	1	..	..	7	4	20	10	30
Inflammation & Congestion, Specific:													
Erysipelas { Idiopathic ...	10	5	1	..	..	..	..	..	2	..	13	5	18
Erysipelas { Traumatic ...	16	3	1	..	..	1	1	..	2	2	20	6	26
Maculae Febriles	28	11	..	..	..	..	..	..	2	..	30	11	41
Scabies	4	2	..	..	1	..	..	..	..	..	5	2	7
Venereal Affection	30	18	8	7	2	..	..	..	1	..	41	25	66
Organic Disease: Malignant	3	3	..	1	1	..	..	..	1	2	5	6	11
Non-Malignant	2	5	1	1	..	1	..	..	..	..	3	7	10
Total Results of Males & Fem.	231	110	24	21	13	7	4	..	24	11	296	149	445
Total Results	341		45		20		4		35		445		
Per Centage	76-629		10-112		4-494		-898		7-665		99-998		

The subdivision in this table may appear to some too minute, and to others too contracted. The object, however, has been rather to give a practical sketch of the various results, than to follow any established nosology. In the first portion, that, namely, comprising injuries, emphysema is the only point of particular interest. This lesion was the result,

in every case, of fractured ribs; and out of the three cases two were fatal, and, indeed, hopeless from the first. Among the eruptions there were four fatal cases, in two of which the affection was pompholyx. The first case was in a man thirty-eight years of age, who died with symptoms of fever complicated with bronchitis, delirium, maculæ, and diarrhœa: he had been previously subject to much privation, and also debilitated by a mercurial course for the cure of syphilis. The second case was in the person of a female, twenty-one years of age, whose death was to be attributed to prostration. The determination to place the maculæ febriles among the diseases of the skin, and to omit scarlatina and rubeola, may to some appear arbitrary; but we have been influenced by the fact, that the maculæ in fever have not been so decidedly proved to be an integral part of the disease, as the rash has been in the instance of the other diseases. Three deaths are referred to malignant disease; two in females, in whom the disease (malignant ulceration) was extensive, and its seat the neck; (in one the poa terra, as a local application, had been used at a previous period, with considerable success;) and one in a man, in whom the disease was situated in the back, in the form of a fungoid tumor, which, after twelve years' slow growth, began rapidly to increase, and at last exuded a sloughy discharge, when the patient sank collapsed. The percentage of the cases cured is high; that of the unrelieved and relieved low: the deaths are but slightly below the average.

(F) INJURIES AND DISEASES OF THE ABSORBENTS.

SUB-DIVISIONS.	Cured.		Relieved.		Un-relieved.		Not Noticed.		Dead.		Total.		GENERAL TOTAL.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Inflammation: Traumatic....	9	5	1	..	..	..	..	..	..	..	10	5	15
Strumous	12	9	..	..	2	1	..	..	..	..	14	10	24
Venereal.....	35	1	6	2	..	..	2	..	..	..	43	3	46
Malignant Disease.....	1	..	..	..	..	1	..	..	..	1	1	2	3
Total Results of Males & Fem.	57	15	7	2	2	2	2	..	..	1	68	20	88
Total Results	72		9		4		2		1		88		
Per Centage	81.818		10.227		4.515		2.272		1.136		99.998		

This table requires but little attention. The venereal class consisting chiefly of cases of suppuration of the inguinal glands, is the most numerous, and accordingly exercises the greatest influence on the per centage. The only fatal case occurred in a patient, who was the subject of malignant disease of the axillary glands, accompanying scirrhus mamma.

(G) DISEASES OF THE URINO-GENITAL SYSTEM.

SUB-DIVISIONS.	Cured.		Relieved.		Unre- lieved.		Not noticed.		Dead.		Total.		GENERAL TOTAL.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Albuminuria	12	2	6	1	2	6	..	..	13	4	33	13	46
Diabetes Mellitus .....	..	..	2	..	..	1	..	..	..	1	2	2	4
Ischuria .....	..	..	..	1	..	..	..	..	1	..	1	1	2
Nephritis .....	..	..	..	..	..	..	..	..	1	..	1	..	1
Cystitis	2	1	2	1	1	..	..	..	..	..	5	2	7
Calculus	7	..	..	..	..	..	1	..	1	..	9	..	9
Injury to Bladder .....	..	..	..	..	..	..	..	..	1	..	1	..	1
Gonorrhoea	24	5	3	1	..	..	..	..	..	..	27	6	33
Stricture and Retention	21	1	13	..	6	..	..	..	7	..	47	1	48
Perineal Inflammation	8	..	5	..	3	..	..	..	4	..	20	..	20
Prostatic Disease .....	..	..	..	..	2	..	..	..	1	..	3	..	3
Cancer of Penis and Vulva	1	..	..	..	..	1	..	..	..	..	1	1	2
Syphilis	85	7	5	..	..	..	5	2	..	..	95	9	104
Testitis	25	..	3	..	..	..	..	..	..	..	28	..	28
Scirrhus Testes	1	..	..	..	..	..	..	..	..	..	1	..	1
Hydrocele	3	..	3	..	..	..	..	..	1	..	7	..	7
Hæmatocele	3	..	..	..	..	..	..	..	..	..	3	..	3
Paramenia .....	..	66	..	24	..	11	..	3	..	..	..	104	104
Disease of Uterus .....	..	3	..	2	..	1	..	1	..	..	..	7	7
Ovaries .....	..	..	..	1	..	1	..	..	..	3	..	5	5
Mamma .....	..	6	..	..	..	2	..	..	..	1	..	9	9
Total Results of Males & Fem.	192	91	42	31	14	23	6	6	30	9	284	160	444
Total Results	283		73		37		12		39		444		
Per Centage	63.738		16.441		8.333		2.702		8.738		99.952		

There are contained in this division 444 cases; and the per centage is generally near the average. The deaths are chiefly due to the heads of albuminuria, and stricture and retention. Among the 46 cases of albuminuria, 17 were fatal; of which 4 were to be referred to the lungs; 8 to the brain; 3 to the heart; and 2 to inflammation of the peritoneum; and 8 out of the 14 cured were after scarlatina. Of the seven fatal cases of stricture and retention, the causes of death were as follows—

CAUSE OF DEATH.	
Stricture with Retention	... Fracture of cranium.
...	Arachnitis.
...	Prostatic disease—collapse.
...	Pneumonia and pericarditis.
...	Pneumonia—low delirium.
... Extravasation ...	Peritonitis.
...	Diffuse suppuration—collapse.

In 4 cases of diabetes, 2 were relieved; one by ammonia, the other by sulphate of iron carried to 12 grains twice a day: of the remaining two, both were treated with pepsin—one after the failure of ammonia and opium, but in neither case with success; for one was discharged unrelieved, and marked for death, as the subject of phthisis: the other died comatose. The subject of ischuria and nephritis will be referred to under the head of fever, of which they were complications. The term “paramenia” has been adopted in compliance with the recommendation of Mr. Farr in the Registrar-General’s report; a general term of the kind having been very much required in classifying diseases. The cases of disease of the uterus and ovaries, alluded to in the table, form but a very small fraction of those admitted into the hospital; indeed, we have included merely such as have been treated in the general wards, whereas the large proportion of the cases are placed in a ward solely devoted to these diseases, and are under the care of the Physician-Accoucheur, for whom they are reported.

(H) INJURIES AND DISEASES OF THE ORGANS OF LOCOMOTION.

SUB-DIVISIONS.	Cured.		Relieved.		Un-re- lieved.		Not Noticed.		Dead.		Total.		GENERAL TOTAL.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Simple Fracture.....	74	11	3	2	..	..	..	1	9	1	86	15	101
Compound ditto.....	8	2	..	..	..	..	..	..	4	..	12	2	14
Inflammation of Bone:													
Simple or Strumous.....	7	5	3	1	2	4	..	..	3	..	15	10	25
Venereal.....	6	1	2	2	..	..	..	..	..	..	8	3	11
Organic Disease.....	..	2	..	..	..	..	..	..	1	..	..	3	3
Sprains.....	8	3	1	1	3	..	..	..	..	..	12	4	16
Wounds of Joints.....	3	..	..	..	1	..	..	..	..	..	4	..	4
Dislocation.....	4	1	..	..	1	1	..	..	1	..	6	2	8
Inflammation of Joints.....	11	11	6	7	4	5	1	..	3	..	25	23	48
Rheumatism:													
Simple.....	39	23	7	11	1	1	2	..	3	3	52	38	90
Venereal.....	17	5	6	2	..	..	..	..	..	..	23	7	30
Inflammation of													
Bursæ Mucosæ.....	3	11	..	..	..	..	..	..	1	..	4	11	15
Thecal Abscess.....													
Talipes.....	12	1	1	..	..	..	..	..	..	..	13	1	14
Diseased Ligaments.....													
Total Results of Males & Fem.	192	76	29	26	12	11	3	1	24	5	260	119	379
Total Results.....	268		55		23		4		29		379		
Per Centage.....	70-712		14-511		6-068		1-055		7-651		99-997		

This table, though containing many medical cases, yet is in the far greater proportion allotted to the consideration of surgical diseases. The per centage does not require much notice: the number cured is rather higher, while the proportion of the deaths is rather lower, than the average. Among the 101 cases of simple fracture, there were ten fatal cases, which are as follow:—

Fracture of cranium	3	Fracture of cervix femoris,	1
vertebræ	2	(Patient 84 years of age.)	
ribs	3	Fracture of fibula	1
(Emphysema, with wound of lungs.)		(Compound dislocation of ankle-joint.)	

Among the 14 cases of compound fracture, 4 were fatal:

Comp. fracture of cranium,	2	Comp. fracture of lower jaw,	1
tibia and fibula	1	(Delirium tremens.)	
(Typhoid symptoms.)			

Out of the 90 cases of rheumatism, there were six fatal, and in all of which the heart was affected.

(I) INJURIES AND DISEASES OF THE EYES AND APPENDAGES.

SUB-DIVISIONS.	Cured.		Relieved.		Unre- lieved.		Not Noticed.		Dead.		Total.		GENERAL TOTAL.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Injuries	6	1	1	1	3	1	1	..	..	..	11	3	14
Inflammation :													
Idiopathic and Arthritic	23	19	15	5	7	2	..	6	..	..	45	32	77
Syphilitic	11	1	6	..	..	..	..	..	..	..	17	1	18
Staphyloma . . . . .	..	..	..	..	1	1	..	..	..	..	1	1	2
Amaurosis	3	1	5	2	8	1	1	..	..	..	17	4	21
Glaucoma . . . . .	..	..	1	1	1	..	..	..	..	..	2	1	3
Cataract	2	3	3	4	..	1	1	..	..	..	6	8	14
Melanosis	1	..	..	..	..	..	..	..	..	..	1	..	1
Disease of Lids, &c.	3	4	3	2	..	..	..	1	..	..	6	7	13
Total Results of Males & Fem.	49	29	34	15	20	6	3	7	..	..	106	57	163
Total Results	78		49		26		10		..		163		
Per Centage	47-852		30-061		15-95		6-134		..		99-997		

In this division, containing the ophthalmic cases, the results do not so closely approach the average as is the case in those we have been lately considering. The cured are not more than 48 per cent.; while the relieved are full 30,

and the unrelieved 15 per cent. These circumstances may, perhaps, arise from the impatience manifested by the sufferers to leave the hospital as soon as any favourable change in their symptoms will allow of a hope of recovery; therefore, such cases can be only recorded as relieved, though possibly the continuance of the treatment, for a short time longer, might have, in many cases, altered the result. The large proportion of unrelieved may arise from impatience of a different kind, under the influence of which one hospital is sought after another, and no time allowed for the trial of remedies in any. And again, we must remember that the cases of amaurosis form one-third of the unrelieved. In the classification, that plan has been adopted which appears more conducive to the practical consideration of the diseases, viz. the kind of inflammation has been regarded, rather than the seat. The melanosis was in the form of a tumor, and was cured by removal with the knife.

(K) FEVERS.

SUB-DIVISIONS.	Cured.		Relieved.		Un-relieved.		Not Noticed.		Dead.		Total.		GENERAL TOTAL.
	M.	F.	M.	F.	M.	F.	M.	F.	.	F.	M.	F.	
Intermittent.....	9	5	2	1	1	..	..	1	1	..	13	7	20
Continued :													
Maculated.....	24	11	..	..	..	..	..	..	2	..	26	11	37
Not Maculated.....	22	19	2	..	..	..	..	..	4	..	28	19	47
Scarlatina.....	1	2	..	..	..	..	1	..	1	..	3	2	5
Rubeola.....	..	1	..	..	..	..	..	..	..	..	..	1	1
Total Results of Males & Fem.	56	38	4	1	1	..	1	1	8	..	70	40	110
Total Results	94		5		1		2		8		110		
Per Centage.....	85.454.		4.545		.909		1.818		7.272		99.998		

This table contains 20 cases of intermittent fever; 84 of continued fever; 5 of scarlatina, and 1 of rubeola: in all,

110. In order to form a conception of the value of these, with regard to the consideration of the late epidemic, we have arranged them according to the time of the admissions into the hospital.

	Maculated.	Not Maculated.
1842. November and December	6	8
1843. January and February	5	9
.. March and April	13	5
.. May and June	3	4
.. July and August	4	2
.. September and October	2	8
.. November and December	4	11
	<hr/> 37	<hr/> 47
	<hr/> 84 <hr/>	

Of the eight fatal cases, one was the result of cerebral disease supervening on a long continued ague; one of scarlatina complicated with jaundice, after four days' illness, in a man 42 years of age. The remaining six were cases of continued fever, and may be arranged in the following manner:—

	Duration of illness, after Admission.	Duration of Illness, before Admission.
Nephritis—hepatitis—pneumonia	2 days	7 days
Pneumonia	23 ..	14 ..
Elephantiasis - low delirium—petechiæ, 10 ..	..	.. ..
Convulsions—maculæ	36 ..	7 ..
Pneumonia—subsultus-tedinum . . . . .	.. ..	4 ..
Coma—spasmodic twitching	12 ..	7 ..

The first of these cases was one of great interest, as it was supposed to resemble, both as to the symptoms before, and the morbid appearances after death, the yellow fever of tropical climates. The patient was admitted September 20th, having been ill seven days. He had jaundice, vomiting, albuminous urine, with prostration, and, at last, perfect ischuria renalis, with convulsive fits: he died on the 22d, two days after admission. On a necroscopic examination, the liver and kidneys were found in acute stages of inflammation; the stomach contained a quantity of dark-coloured grumous fluid; and the lungs gave evidence of pneumonia. The third case was admitted for elephantiasis on February 8th, having at that time been ill for ten months; and on May 10th

he was attacked with fever, while in the hospital, a very rare occurrence, and died in ten days. Other points connected with this subject will receive some elucidation in this our current number.

(L) POISONS.

SUB-DIVISIONS.	Cared.		Relieved.		Unre- lieved.		Not noticed.		Dead.		Total.		GENERAL TOTAL.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Lead.....	8	1	3	..	..	..	..	..	..	..	11	1	12
Oil of Bitter Almonds.....	1	..	..	..	..	..	..	..	..	..	1	..	1
Corrosive Sublimate .....	..	..	..	..	..	..	..	..	1	..	1	..	1
Adder Bite.....	1	..	..	..	..	..	..	..	..	..	1	..	1
Unknown .....	..	1	..	..	..	..	..	..	..	..	..	1	1
Total Results of Males & Fem.	10	2	3	..	..	..	..	..	1	..	14	2	16
Total Results	12		3		..		..		1		16		
Per Centage	75		18.75		..		..		6.25		100		

This division is much too scanty to admit of aught else than enumeration. The three patients relieved had been admitted for paralysis from lead. The poison, which is represented as unknown, was probably alcohol, though possibly laudanum.

We now subjoin two Tables of Operations: in the first are comprehended all the cases entered during the year in the books of the Clinical Society; and in the second, all the operations performed, during the same year, in the hospital, exclusive, however, of the cases of paracentesis, cataract, and of those generally, in which the operation, either from the danger of removal or the nature of the disease, was performed in the ward.

But to guard against error in the institution of any comparison between the two tables, we must first subtract from Table L. the cases alluded to above, when the results will present the following relation:—

	Cured.	Relieved.	Unrelieved.	Not noticed.	Dead.	Total.
Table I. Modified	85-897	5 128	...	...	8-974	99-999.
Table II.	...	73-972	..	1-37	6-849	17-808 99-999.

In considering the difference, thus increased, between the proportional results, we ought to remember, first, that many of the cases in the first table, though entered in 1843, were performed at the latter part of the previous year; and, secondly, that the reporters are directed, by the rules of the Society, to forego the report in all cases where their interference might either endanger the patient or add to his sufferings. And thus we explain the difference in the proportion of deaths in the two tables. With this reservation, we offer the tables to our readers.

OPERATIONS.—No. 1.

SUB-DIVISIONS.	Cured.		Relieved.		Unrelieved.		Not Noticed.		Dead.		Total.		GENERAL TOTAL.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Excision of Tumors.....	9	12	2	..	..	..	..	..	..	1	11	13	24
Amputation.....	16	6	..	..	..	..	..	..	..	..	16	6	22
Excision of Joints.....	1	..	..	..	..	..	..	..	..	..	1	..	1
Trephining, &c.....	..	..	..	..	..	..	..	..	2	..	2	..	2
Tracheotomy.....	..	..	..	..	..	..	..	..	..	1	..	1	1
Ligature of Arteries.....	6	..	..	..	..	..	..	..	..	..	6	..	6
Lithotomy.....	5	..	..	..	..	..	..	..	1	..	6	..	6
Lithotrixy.....	2	..	..	..	..	..	..	..	..	..	2	..	2
Hernia.....	..	..	..	..	..	..	..	..	..	1	..	1	1
Paracentesis Thoracis.....	..	2	..	..	..	..	..	..	1	..	1	2	3
..... Abdominis.....	1	..	..	..	..	..	..	..	3	2	4	2	6
..... Tun. Vaginalis.....	8	..	3	..	..	..	..	..	..	..	11	..	11
Cataract.....	2	3	3	3	..	..	1	..	..	..	6	6	12
Miscellaneous.....	8	2	2	..	..	..	..	..	1	..	11	2	13
Total Results of Males & Fem.	58	25	10	3	..	..	1	..	8	5	77	33	110
Total Results.....	83		13		..		1		13		110		
Per Centage.....	75-454		11-818		..		-909		11-818		99-999		

No. II.—TABLE OF OPERATIONS, WITH THEIR RESULTS, PERFORMED IN GUY'S HOSPITAL, DURING 1843.

OPERATIONS.	Cured.	Dead.	Not noticed.	Un-relieved.	Total.
Amputation	20	2	2	..	24
Excision of Tumors.....	22	1	1	..	24
Lithotomy.....	5	2	..	..	7
Lithotrity.....	1	..	1	..	2
Aneurism	2	..	..	..	2
Hernia .....	..	3	..	..	3
Ovariectomy .....	..	1	..	..	1
Trephining .....	..	3	1	..	4
Operation for cleft palate.....	..	..	..	1	1
Perineal incision into urethra...	2	1	..	..	3
Hare-lip	1	..	..	..	1
Removal of cicatrix for the cure } of wry neck, from burn... }	1	..	..	..	1
Total Results	54	13	5	1	73
Per centage.....	73.972	17.808	6.849	1.37	99.999
Per centage in the reported } cases of operations..... }	75.454	11.818	9.909	..	..

We have already considered the difference between the deaths in the two tables, and, to a certain extent, accounted for it. The disease in the first fatal case, for which the operation was performed, was scirrhus mamma, and death took place thirty-four days after the operation, and twelve after the supervention of erysipelas. Out of three cases of paracentesis thoracis, two were cured and one fatal. Out of six of paracentesis abdominis, in five the operation was merely considered as palliative. In the cases of paracentesis for the cure of hydrocele, the tincture of iodine was used as an injection in five, and port-wine in two of the successful cases. The operation in the cases of cataract was for solution, and performed by aid of the needle. Under the head "miscella-

neous" we include the operations for talipes varus, conical stump, hare-lip, perinæal opening of the urethra for stricture, &c. The fatal case was one of extravasation of urine, in which the urethra was opened in the perinæum, and death was owing, not to the operation, but to the disease for which the operation was performed. In the second table, the operation for the removal of a cicatrix, the result of a burn, has been represented as successful, inasmuch as the patient left the hospital quite relieved; though the nature of such lesions gives us too much reason to fear that the relief may only be temporary.

TABLE showing the per centage of the different Analytical Tables, with the average per centage deduced therefrom, and compared with the per centage of the General Table of Results.

ANALYTICAL TABLES.	Cured.	Relieved.	Un-relieved.	Not noticed.	Dead.
Injuries and Diseases of Brain and Nervous System	46-931	19-494	10-83	361	22-382
.....Lungs and Appendages....	46-816	19-475	11-235	1-872	20-599
.....Organs of Circulation.....	41-324	24-29	11-671	2-523	20-189
.....Organs of Digestion.....	56-603	17-61	15-094	943	9-748
.....Integuments.....	76-629	10-112	4-494	898	7-865
.....Lymphatic System.....	81-818	10-227	4-545	2-272	1-136
.....Urino-Genital System.....	63-738	16-441	8-333	2-702	8-738
.....Organs of Locomotion.....	70-712	14-511	6-068	1-055	7-651
.....Eye and Appendages.....	47-852	30-061	15-95	6-134	..
Fevers.....	85-454	4-545	909	1-818	7-2
Poisons.....	75	18-75	..	..	6-25
Hæmorrhages.....	46-938	28-571	14-287	2-02	8-163
Dropsies.....	33-913	22-608	11-304	869	31-304
Operations.....	75-454	11-818	..	909	11-818
Average Per Centage.....	60-655	17-746	8-194	1-741	10-936
Average Per Centage, omitting the Hæmorrhages } and Dropsies included in Table C..... }	64-027	16-439	7-427	1-79	9-47
Per Centage of the results of the General Table ..	65-371	17-882	6-429	935	8-372

This is a table of per centages, and is given with the view of drawing within a small space the per centages of the results of the different analytical tables, so that an average of the whole may be taken, and compared with the per centage of the General Table of Results; and the close agreement between the two, viz. the general per centage and the average analytical per centage, exclusive of the supplementary tables, is a proof, to a certain extent, of the accuracy with which the several results have been noted.

We likewise add, for the sake of interest, but without observation, a table of accidents admitted during the year:—

TABLE OF "ACCIDENTS" ADMITTED INTO GUY'S HOSPITAL
DURING THE YEAR 1843.

Simple Fractures:					
Cranium	2		Tibia and Fibula	6	
Vertebrae	2		Metatarsal Bones	4	33
Clavicle	6		Compound Comminuted Fractures:		
Humerus	23		Of Upper Extremities	3	
Ulna	3		Of Lower Extremities	7	
Radius	8			—	10
Ribs	16		Dislocations:		
Sternum ..	1		Of Femur (Hip)	2	
Ilium	4		Humerus (Shoulder)	3	
Femur	50		Radius and Ulna	1	
Tibia	20		Tibia and Fibula	1	7
Fibula	30			—	7
Tibia and Fibula	30		Compound Dislocations:		
Patella	10		Knee-joint	1	
Metatarsal Bones	5		Ankle-joint	3	4
Superior Maxillar	1	216		—	4
Compound Fractures:			Burns and Scalds	56	56
Cranium	6		Contusions	56	56
Inferior Maxilla	1		Wounds:		
Humerus	3		Lacerated	65	
Elbow-joint	1		Incised	4	
Metacarpal Bones	8		Punctured	5	
Femur	1		Adder-bite	1	
Tibia	3		Dog-bite	3	
			Cut-throat	3	
			Wound of Chest	1	82

Hæmorrhage.....	5	Apoplexy	1
Injury to Head.....	3	Hernia	12
Back	3	Retention of Urine.....	16
Spine.....	3	Poison	7
Chest.....	5		<hr/> 116
Abdomen	4		310
Joints	33	Fractures	259
Arm.....	3	Dialocations.....	11
Eye.....	2		<hr/> 580
Rapture of Ligamentum Patellæ..	2	Cases under Two Heads	22
Concussion of Brain.....	17		<hr/> 558

We have at length arrived at the end of a very troublesome task; but, we hope, one not without its use, if merely as an example. The principal value of the Report depends on the tables; and the intercurrent observations are introduced, partly with a view to explanation, and partly to relieve the tediousness of the details. But we shall be fully repaid for the labour and anxiety it has cost us, if it shall at all serve to prove the value of a Society, which, though perhaps allowed to stand too much on its own merits, has already done much, and is further capable of being moulded into one of the most effective instruments of medical education, and perhaps of advancement in scientific medicine.

LIST
OF
GENTLEMEN EDUCATED AT GUY'S HOSPITAL,
WHO HAVE BEEN ADMITTED
MEMBERS OF THE ROYAL COLLEGE OF SURGEONS,
BACHELORS OF MEDICINE IN THE UNIVERSITY OF LONDON,
AND MEMBERS OF THE APOTHECARIES' COMPANY,
FROM SEPTEMBER 1843, TO SEPTEMBER 1844.

Royal College of Surgeons.

OMITTED, JUNE 1843.

Mr. Richard Clark.		Mr. Thomas Nicholas.
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OCTOBER 1843.

Mr. Henry G. Noyes.		Mr. Thomas Percival.
— Francis Smith.		

NOVEMBER.

Mr. Henry Marsh Webb.		Mr. William D. Headley.
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DECEMBER.

Mr. John Burt.		Mr. John S. Knight.
— Edward M. Foster.		— Edward P. Phillips.
— David Evans.		

JANUARY 1844.

Mr. Frederick Harvey.

FEBRUARY.

Mr. Charles Sutcliffe.		Mr. John M. Goodinge.
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MARCH.

Mr. Charles D. Shephard.		Mr. Amos Beardsley.
— Henry Billinghamurst.		

APRIL.

Mr. Benjamin Eddison.	|	Mr. William G. Wotton.
— Thomas Oldacres.		— Allen Major.
— William F. Footitt.		— Johnson T. Mosgrove.
— William H. Benson.		

Apothecaries' Hall.

1843.—NAMES OMITTED IN LAST VOLUME:

Mr. Edward P. Phillips. Mr. Elijah Dodd. Mr. Henry W. Pain.

SEPTEMBER.

Mr. George Gunthorpe.

OCTOBER.

Mr. Henry Dixon.

NOVEMBER.

Mr. William Few.
— Charles Sutcliffe.

Mr. Edward Miller.
— Joseph H. Browne.

JANUARY 1844.

Mr. Charles P. Symonds.
— Lord Huntley.

Mr. Henry Willats.

FEBRUARY.

Mr. John N. Morse.
— Henry M. Champnes.

Mr. Robert W. Woolcombe.
— George Padley.

APRIL.

Mr. George Appleton.
— William F. Foottit.
— Thomas Nicholas.
— Edward Garraway.
— Richard B. Yeats.
— Richard Clark.

Mr. William F. Coles.
— William W. Wildey.
— William C. Small.
— Thomas B. Cowherd.
— John C. Parrott.

MAY.

Mr. John S. Knight.
— Henry M. Gruggen.
— Charles L. Prince.
— George P. Smith.
— Edward M. Foster.
— Thomas W. Challinor.
— Edward O. Golding.

Mr. Christopher Hall.
— William B. Kelloch.
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